





## Abbreviations used for vertebrate sequences

| Abbreviation (PTP prefix) | Species (Common Name)       | Species                                       |
|---------------------------|-----------------------------|---|
| aotusPTP                  | Monkey (noisy night)        | <a href="#"><i>Aotus vociferans</i></a>       |
| bPTP                      | Cow                         | <a href="#"><i>Bos taurus</i></a>             |
| cypcaPTP                  | Common Carp                 | <a href="#"><i>Cyprinus carpio</i></a>        |
| zPTP                      | Zebrafish                   | <a href="#"><i>Danio rerio</i></a>            |
| cPTP                      | Chicken                     | <a href="#"><i>Gallus gallus</i></a>          |
| sharkPTP                  | Horn Shark                  | <a href="#"><i>Heterodontus francisci</i></a> |
| hPTP                      | Human                       | <a href="#"><i>Homo sapiens</i></a>           |
| macfaPTP                  | Monkey (Crab-eating)        | <a href="#"><i>Macaca fascicularis</i></a>    |
| macmuPTP                  | Monkey (rhesus)             | <a href="#"><i>Macaca mulatta</i></a>         |
| macnePTP                  | Monkey (Pig-tailed macaque) | <a href="#"><i>Macaca nemestrina</i></a>      |
| mPTP                      | Mouse                       | <a href="#"><i>Mus musculus</i></a>           |
| rabPTP                    | Rabbit                      | <a href="#"><i>Oryctolagus cuniculus</i></a>  |
| orylaPTP                  | Japanese ricefish           | <a href="#"><i>Oryzias latipes</i></a>        |
| ryPTP                     | Stingray                    | <a href="#"><i>Potamotrygon motoro</i></a>    |
| rPTP                      | Rat                         | <a href="#"><i>Rattus norvegicus</i></a>      |
| pigPTP                    | Pig                         | <a href="#"><i>Sus scrofa</i></a>             |
| fuPTP                     | Fugu                        | <a href="#"><i>Takifugu rubripes</i></a>      |
| xPTP                      | African clawed frog         | <a href="#"><i>Xenopus laevis</i></a>         |

Database of non-vertebrate PTPs and assignment of ortholog sequences  
A non-redundant set of PTP domain sequences - mRNA and protein entries

Invertebrates - PSI BLAST Result

| Seq No | Accession nr | SourceID | NR       | Subtype | Species | Species                         | Name                 | Human Ortholog | Synonyms | Gene ID       | AA  | Comments          |
|--------|--------------|----------|----------|---------|---------|---------------------------------|----------------------|----------------|----------|---------------|-----|-------------------|
| 135    | gi1079024    | pir      | S53089   | Ref     | R2A     | <i>Anopheles gambiae</i>        | African malaria      | anLAR          | LAR      |               |     | 1231              |
| 384    | gi11358730   | pir      | T51846   | Ref     | ?       | <i>Arabidopsis thaliana</i>     | Arabidopsis          | larathPTP1     |          |               |     | 340               |
| 380    | gi3413425    | emb      | CAA06978 | ?       | ?       | <i>Arabidopsis thaliana</i>     | Arabidopsis          | larathPTP1     |          | locus ATH6309 |     | 340               |
| 507    | gi12324541   | gb       | AAG52227 | ?       | ?       | <i>Arabidopsis thaliana</i>     | Arabidopsis thaliana |                |          |               |     | 169               |
| 259    | gi17684260   | dbj      | BAA9     |         |         |                                 |                      |                |          |               |     | 469               |
| 275    | gi17684254   | dbj      | BAA9     |         |         |                                 |                      |                |          |               |     | 469               |
| 281    | gi17684252   | dbj      | BAA9     |         |         |                                 |                      |                |          |               |     | 470               |
| 383    | gi17684256   | dbj      | BAA9     |         |         |                                 |                      |                |          |               |     |                   |
| 429    | gi17684305   | dbj      | BAA9     |         |         |                                 |                      |                |          |               |     |                   |
| 433    | gi17684250   | dbj      | BAA9     |         |         |                                 |                      |                |          |               |     | 480               |
| 440    | gi17684258   | dbj      | BAA9     |         |         |                                 |                      |                |          |               |     |                   |
| 454    | gi17684248   | dbj      | BAA9     |         |         |                                 |                      |                |          |               |     |                   |
| 473    | gi17684307   | dbj      | BAA9     |         |         |                                 |                      |                |          |               |     |                   |
| 86     | gi12698664   | gb       | AAK0     |         |         |                                 |                      |                |          |               |     | 2200              |
| 99     | gi6226890    | sp       | P2811    |         |         |                                 |                      |                |          |               |     | 1026              |
| 84     | gi17511581   | pir      | T1911    |         |         |                                 |                      |                |          |               |     | 1585              |
| 85     | gi12698666   | gb       | AAK0     |         |         |                                 |                      |                |          |               |     | 1487              |
| 97     | gi17497608   | pir      | T1963    |         |         |                                 |                      |                |          |               |     | 624               |
| 212    | gi17505278   | pir      | T2330    |         |         |                                 |                      |                |          |               |     | 1156              |
| 266    | gi17503426   | pir      | T2191    |         |         |                                 |                      |                |          |               |     | 1367              |
| 286    | gi17504815   | pir      | T3431    |         |         |                                 |                      |                |          |               |     | 668               |
| 378    | gi17503637   | pir      | T2911    |         |         |                                 |                      |                |          |               |     | 374               |
| 400    | gi17508204   | pir      | T2511    |         |         |                                 |                      |                |          |               |     | 591               |
| 402    | gi11275230   | pir      | T4251    |         |         |                                 |                      |                |          |               |     |                   |
| 403    | gi17504323   | pir      | T2951    |         |         |                                 |                      |                |          |               |     |                   |
| 405    | gi17499844   | pir      | T2131    |         |         |                                 |                      |                |          |               |     |                   |
| 409    | gi17332259   | gb       | AAF61    |         |         |                                 |                      |                |          |               |     |                   |
| 410    | gi17506013   | pir      | AAF61    |         |         |                                 |                      |                |          |               |     |                   |
| 415    | gi14574315   | gb       | AAK0     |         |         |                                 |                      |                |          |               |     |                   |
| 423    | gi17508547   | pir      | T25917   | ?       | ?       | <i>Caenorhabditis elegans</i>   | C.elegans            |                |          | T27A3.5       |     |                   |
| 424    | gi17504409   | pir      | T30111   | ?       | ?       | <i>Caenorhabditis elegans</i>   | C.elegans            |                |          | F56D1.4       |     |                   |
| 430    | gi2854164    | gb       | AAC02582 | ?       | ?       | <i>Caenorhabditis elegans</i>   | C.elegans            |                |          | C17H12.3      |     |                   |
| 431    | gi17105608   | gb       | AAF36005 | ?       | ?       | <i>Caenorhabditis elegans</i>   | C.elegans            |                |          | Y71F9AL.4     |     |                   |
| 432    | gi14966291   | gb       | AAD34661 | ?       | ?       | <i>Caenorhabditis elegans</i>   | C.elegans            |                |          | F20H11.4      |     |                   |
| 434    | gi17508697   | pir      | T25430   | ?       | ?       | <i>Caenorhabditis elegans</i>   | C.elegans            |                |          | T28F4.3       | 490 |                   |
| 437    | gi17500661   | pir      | T33446   | ?       | ?       | <i>Caenorhabditis elegans</i>   | C.elegans            |                |          | F36H12.10     |     |                   |
| 438    | gi14574622   | gb       | AAK68680 | ?       | ?       | <i>Caenorhabditis elegans</i>   | C.elegans            |                |          | C02B10.6      |     |                   |
| 439    | gi13559717   | gb       | AAK29923 | ?       | ?       | <i>Caenorhabditis elegans</i>   | C.elegans            |                |          | Y48G9A.9      |     |                   |
| 442    | gi17500656   | pir      | T21883   | ?       | ?       | <i>Caenorhabditis elegans</i>   | C.elegans            |                |          | F36H1.3       |     |                   |
| 444    | gi17511101   | pir      | T25992   | ?       | ?       | <i>Caenorhabditis elegans</i>   | C.elegans            |                |          | ZK354.8       |     |                   |
| 445    | gi1943802    | gb       | AAB52456 | ?       | ?       | <i>Caenorhabditis elegans</i>   | C.elegans            |                |          | B0207.1       |     |                   |
| 447    | gi17505473   | pir      | T23421   | ?       | ?       | <i>Caenorhabditis elegans</i>   | C.elegans            |                |          | K07F5.8       | 284 |                   |
| 451    | gi17507803   | pir      | T23738   | ?       | ?       | <i>Caenorhabditis elegans</i>   | C.elegans            |                |          | T13H5.1       |     |                   |
| 453    | gi14573993   | gb       | AAK68274 | ?       | ?       | <i>Caenorhabditis elegans</i>   | C.elegans            |                |          | C55B7.3       |     |                   |
| 456    | gi17506519   | pir      | T24090   | ?       | ?       | <i>Caenorhabditis elegans</i>   | C.elegans            |                |          |               |     |                   |
| 462    | gi17503631   | pir      | T29156   | ?       | ?       | <i>Caenorhabditis elegans</i>   | C.elegans            |                |          | F47B3.1       |     |                   |
| 463    | gi17503636   | pir      | T29153   | ?       | ?       | <i>Caenorhabditis elegans</i>   | C.elegans            |                |          | F47B3.6       |     |                   |
| 465    | gi17498856   | pir      | T20729   | ?       | ?       | <i>Caenorhabditis elegans</i>   | C.elegans            |                |          | F10G8.1       |     |                   |
| 476    | gi15701822   | emb      | CAB52188 | ?       | ?       | <i>Caenorhabditis elegans</i>   | C.elegans            | wIDA-1         |          |               |     |                   |
| 480    | gi17511170   | pir      | T32869   | ?       | ?       | <i>Caenorhabditis elegans</i>   | C.elegans            |                |          | ZK484.7       |     |                   |
| 481    | gi17503761   | pir      | T22382   | ?       | ?       | <i>Caenorhabditis elegans</i>   | C.elegans            |                |          | F48F5.1       |     |                   |
| 491    | gi3342257    | gb       | AAC27552 | ?       | ?       | <i>Caenorhabditis elegans</i>   | C.elegans            | wCLR-1         |          |               | 942 | Truncated         |
| 494    | gi17509339   | pir      | T26452   | ?       | ?       | <i>Caenorhabditis elegans</i>   | C.elegans            |                |          | Y113G7C.1     |     |                   |
| 496    | gi17496955   | pir      | T34151   | ?       | ?       | <i>Caenorhabditis elegans</i>   | C.elegans            |                |          | C33H5.16      |     |                   |
| 499    | gi17498859   | pir      | T20724   | ?       | ?       | <i>Caenorhabditis elegans</i>   | C.elegans            |                |          | F10G8.4       |     |                   |
| 500    | gi17504215   | pir      | T22872   | ?       | ?       | <i>Caenorhabditis elegans</i>   | C.elegans            |                |          | F54F12.1      |     |                   |
| 502    | gi17500825   | pir      | T21973   | ?       | ?       | <i>Caenorhabditis elegans</i>   | C.elegans            |                |          | F38H4.4       |     |                   |
| 503    | gi17508902   | pir      | T29019   | ?       | ?       | <i>Caenorhabditis elegans</i>   | C.elegans            |                |          | W03F11.4      |     |                   |
| 504    | gi14550387   | gb       | AAK18987 | ?       | ?       | <i>Caenorhabditis elegans</i>   | C.elegans            |                |          | W03F11.4      |     |                   |
| 508    | gi11359780   | pir      | T45039   | ?       | ?       | <i>Caenorhabditis elegans</i>   | C.elegans            |                |          | Y39B6B.m      |     | Imported          |
| 511    | gi17506672   | pir      | T33093   | ?       | ?       | <i>Caenorhabditis elegans</i>   | C.elegans            |                |          | R12E2.10      |     |                   |
| 512    | gi17508144   | pir      | T29763   | ?       | ?       | <i>Caenorhabditis elegans</i>   | C.elegans            |                |          | T21E3.1       |     |                   |
| 513    | gi17506015   | pir      | T23725   | ?       | ?       | <i>Caenorhabditis elegans</i>   | C.elegans            |                |          | M05B5.1       |     |                   |
| 518    | gi6425532    | emb      | CAB60442 | ?       | ?       | <i>Caenorhabditis elegans</i>   | C.elegans            |                |          | Y80D3A.8      |     |                   |
| 525    | gi17497483   | pir      | T29814   | ?       | ?       | <i>Caenorhabditis elegans</i>   | C.elegans            |                |          | C46A5.1       |     |                   |
| 526    | gi17508034   | pir      | T15125   | ?       | ?       | <i>Caenorhabditis elegans</i>   | C.elegans            |                |          | T20B6.1       |     |                   |
| 527    | gi17496931   | pir      | T15749   | ?       | ?       | <i>Caenorhabditis elegans</i>   | C.elegans            |                |          | C33F10.8      |     |                   |
| 530    | gi17510958   | pir      | T27722   | ?       | ?       | <i>Caenorhabditis elegans</i>   | C.elegans            |                |          | ZK1251.5      |     |                   |
| 531    | gi156407     | gb       | AAK28127 | ?       | ?       | <i>Caenorhabditis elegans</i>   | C.elegans            | wPTPA          |          |               | 107 | Locus CELTPAA     |
| 532    | gi17331823   | gb       | AAF60511 | ?       | ?       | <i>Caenorhabditis elegans</i>   | C.elegans            |                |          | Y39A3A.4      |     |                   |
| 535    | gi11359772   | pir      | T45031   | ?       | ?       | <i>Caenorhabditis elegans</i>   | C.elegans            |                |          | Y39B6B.e      |     | Imported          |
| 541    | gi17503632   | pir      | T29155   | ?       | ?       | <i>Caenorhabditis elegans</i>   | C.elegans            |                |          | F47B3.2       |     |                   |
| 546    | gi17507098   | pir      | T24462   | ?       | ?       | <i>Caenorhabditis elegans</i>   | C.elegans            |                |          | T04F3.3       |     |                   |
| 549    | gi131558     | sp       | P28192   | ?       | ?       | <i>Caenorhabditis elegans</i>   | C.elegans            | wPTP2          |          | PTP2          | 108 |                   |
| 552    | gi14578260   | gb       | AAK68894 | ?       | ?       | <i>Caenorhabditis elegans</i>   | C.elegans            |                |          | Y54F10BM.3    |     |                   |
| 562    | gi17505471   | pir      | T23412   | ?       | ?       | <i>Caenorhabditis elegans</i>   | C.elegans            |                |          | K07F5.6       |     |                   |
| 563    | gi17499471   | pir      | T34229   | ?       | ?       | <i>Caenorhabditis elegans</i>   | C.elegans            |                |          | F20B6.1       |     |                   |
| 573    | gi17509842   | pir      | T26897   | ?       | ?       | <i>Caenorhabditis elegans</i>   | C.elegans            |                |          | Y44A6D.4      |     |                   |
| 583    | gi17505672   | pir      | T32088   | ?       | ?       | <i>Caenorhabditis elegans</i>   | C.elegans            |                |          | K09F6.3       |     |                   |
| 584    | gi17503402   | pir      | T22184   | ?       | ?       | <i>Caenorhabditis elegans</i>   | C.elegans            |                |          | F44F4.2       |     |                   |
| 585    | gi17506753   | pir      | T15279   | ?       | ?       | <i>Caenorhabditis elegans</i>   | C.elegans            |                |          | R155.3        |     |                   |
| 593    | gi17508757   | pir      | T26040   | ?       | ?       | <i>Caenorhabditis elegans</i>   | C.elegans            |                |          | W01B6.6       |     |                   |
| 604    | gi13559665   | gb       | AAK29874 | ?       | ?       | <i>Caenorhabditis elegans</i>   | C.elegans            |                |          | Y22D7AR.      |     |                   |
| 606    | gi17506022   | pir      | T23733   | ?       | ?       | <i>Caenorhabditis elegans</i>   | C.elegans            |                |          | M05D6.3       |     |                   |
| 609    | gi17500460   | pir      | T21741   | ?       | ?       | <i>Caenorhabditis elegans</i>   | C.elegans            |                |          | F35C11.2      |     |                   |
| New    | gi24418239   | gb       | AAK29895 | ?       | ?       | <i>Caenorhabditis elegans</i>   | C.elegans            |                |          | Y48G1C.5      |     |                   |
| New    | gi23820863   | gb       | AAK31046 | R8      | R8      | <i>Caenorhabditis elegans</i>   | C.elegans            | IA2 subtype    |          |               |     | 767               |
| New    | gi16604217   | gb       | AAK68563 | R8      | R8      | <i>Caenorhabditis elegans</i>   | C.elegans            | IA2 subtype    |          | Y69A2AR.19    |     |                   |
| 261    | gi9229928    | dbj      | BAB00633 | NT5     | NT5     | <i>Ciona intestinalis</i>       | Ciona intest         | CI-PTP         |          | PTPH1/MEG1    |     | 987               |
| 162    | gi464500     | sp       | P34138   | NT1     | NT1     | <i>Dictyostelium discoideum</i> | Dictyostelium        | PTPA           |          | PTP1B Subtype |     | 377               |
| 330    | gi1709903    | sp       | P54637   | ?       | ?       | <i>Dictyostelium discoideum</i> | Dictyostelium        | PTP3           |          | PTP3_DICDI    |     |                   |
| 407    | gi348540     | pir      | A44267   | ?       | ?       | <i>Dictyostelium discoideum</i> | Dictyostelium        | PTP1           |          | PTP1_DICDI    | 521 | Nonreceptor type1 |
| 408    | gi464498     | sp       | P34137   | ?       | ?       | <i>Dictyostelium discoideum</i> | Dictyostelium        | PTP1           |          | PTP1_DICDI    | 521 |                   |
| 140    | gi1079130    | pir      | A46101   | Ref     | NT1     | <i>Drosophila melanogaster</i>  | Drosophila           | dPTP61F        |          | PTP1B/TCPTP   |     | 535               |
| 153    | gi125977     | sp       | P16621   | Ref     | R2A     | <i>Drosophila melanogaster</i>  | Drosophila           | dLAR           |          | LAR           |     | 2029              |

Under construction !!!

A set of non-vertebrate PTP sequences is coming soon.



## Abbreviations used for non-vertebrate sequences

| Abbreviation (PTP prefix) | Species (Common Name)      | Species                         |
|---------------------------|----------------------------|---------------------------------|
| amPTP                     | Amphioxus                  | <i>Branchiostoma belcheri</i>   |
| ciPTP                     | Ciona intestinalis         | <i>Ciona intestinalis</i>       |
| hmPTP                     | Leach                      | <i>Hirudo medicinalis</i>       |
| anPTP                     | Mosquito (African malaria) | <i>Anopheles gambiae</i>        |
| dmPTP                     | Fruitfly                   | <i>Drosophila melanogaster</i>  |
| psPTP                     | Garden Pea                 | <i>Pisum sativum</i>            |
| hgPTP                     | Hagfish                    | <i>Eptatretus burgeri</i>       |
| ddPTP                     | Slime mold                 | <i>Dictyostelium discoideum</i> |
| gmPTP                     | Soybean                    | <i>Glycine max</i>              |
| gcPTP                     | Sponge                     | <i>Geodia cydonium</i>          |
| efPTP                     | Sponge                     | <i>Ephydatia fluviatilis</i>    |
| spPTP                     | Styela plicata             | <i>Styela plicata</i>           |
| arPTP                     | Thale cress                | <i>Arabidopsis thaliana</i>     |
| cerivPTP                  | Yeast                      | <i>Saccharomyces cerevisiae</i> |
| pombePTP                  | Yeast                      | <i>Saccharomyces pombe</i>      |
| cePTP                     | Worm                       | <i>Caenorhabditis elegans</i>   |
| ncPTP                     | Neurospora crassa          | <i>Neurospora crassa</i>        |

**Annotation of non-vertebrate PTP sequences coming soon**



## PTP-related structures including auxillary domains

| PTP               | Species                   | Ligand   | Mutation             | PDB ID               |
|-------------------|---------------------------|--|----------------------|----------------------|
| N-terminal SH2 do | Mouse                     | Peptide from PDGFR (site 1009): VLpYTAVQP                    |                      | <a href="#">1AYA</a> |
| N-terminal SH2 do | Mouse                     | Peptide from IRS-1 (site 895): GEpYVNIEF                     |                      | <a href="#">1AYB</a> |
| N-terminal SH2 do | Mouse                     | Peptide from the PDGFR (site 740): GpYMDMS                   |                      | <a href="#">1AYC</a> |
| N-terminal SH2 do | Mouse                     | No ligand  | None                 | <a href="#">1AYD</a> |
| N-Terminal domain | <i>Yersinia pestis</i>    | No ligand  | None                 | <a href="#">1HUF</a> |
| N-Terminal domain | <i>pseudotuberculosis</i> | No ligand  | None                 | <a href="#">1K46</a> |
| N-Terminal domain | <i>pseudotuberculosis</i> | No ligand  | None                 | <a href="#">1MOV</a> |
| Energy-coupling p | <i>Escherichia coli</i>   | An energy-coupling protein from bacteria, IIBce              | None                 | <a href="#">1IIB</a> |
| LMW-PTP           | <i>Bos taurus</i>         | Solution structure of a low molecular weight pro             | None                 | <a href="#">1BVH</a> |
| PDZ domain of PT  | Mouse                     | Structure, Dynamics and Binding Characteristic               | None                 | <a href="#">1GM1</a> |
| PDZ Domain from   | Human                     | C-Terminal Peptide from the Fas Receptor                     |                      | <a href="#">3PDZ</a> |
| SH3 domain of CS  | Mouse                     | 25-residue peptide from the PEST-domain of P                 | None                 | <a href="#">1JEG</a> |
| Arsenate reductas | <i>Bacillus Subtilis</i>  | Similar to Low Molecular Weight Protein Tyrosine Phosphatase |                      | <a href="#">1JL3</a> |
| Mkp-3 Erk3 bindin | Human                     |  |                      | <a href="#">1HZM</a> |
| Pac-1             | Human                     |  | Active site mutation | <a href="#">1KZ</a>  |



Table S1 (Supplement to Table 1 in manuscript)

## Genomic PTP sequence database (draft-quality and finished clones)

### Summary of accession numbers identified by mining the human genome for PTP-like sequences

| PTP  |                |                       | Chromosomal location |                      |  |                                   | Accession numbers            |          |          |          |          |           |           |
|--|----------------|-----------------------|----------------------|----------------------|--|-----------------------------------|------------------------------|----------|----------|----------|----------|-----------|-----------|
| Name   | Gene<br>Symbol | Locus ID<br>LocusLink | Chr.                 | Assembly<br>Build 33 | Experimental cytogenetic mapping<br>PubMed |                                   | Genomic clones ID<br>GenBank |          |          |          |          |           |           |
| <b>PTP-encoding genes</b>  |                |                       |                      |                      |  |                                   |                              |          |          |          |          |           |           |
| LyPPT  | PTPN22         | 26191                 | 1                    | 1p13.2               | 1p13                                       | Cohen et al                       | AL137856                     | AL365321 |          |          |          | NT 019273 |           |
| LAR  | PTPRF          | 5792                  | 1                    | 1p34.2               | 1p32                                       | Jirik et al                       | AC092815                     | AL158083 |          |          |          | NT 032971 |           |
| PTPlamda   | PTPRU          | 10076                 | 1                    | 1p35.3               | 1p35                                       | Avraham et al                     | AL049570                     |          |          |          |          | NT 004538 |           |
| CD45   | PTPRC          | 5788                  | 1                    | 1q31.3               | 1q31-q32                                   | Goff et al                        | AC117946                     | AL157402 | AL355988 |          |          | NT 029862 |           |
| HePTP  | PTPN7          | 5778                  | 1                    | 1q32.1               | 1q32.1                                     | Zanke et al, Adachi et al         | AL592300                     |          |          |          |          | NT 034408 |           |
| PTP-OST  | N.A.           | N.A.                  | 1                    | 1q32.1               | N.D.                                       |                                   | AL356953                     | AL592300 | AL354751 |          |          | NT 034408 |           |
| PTPD2  | PTPN14         | 5784                  | 1                    | 1q32.3               | 1q32.2-q41                                 | Smith et al                       | AL603838                     | AL592216 | AC026065 | AC068586 | AL590137 | NT 004612 |           |
| MEG1   | PTPN4          | 5775                  | 2                    | 2q14.2               | N.D.                                       |                                   | AC016691                     | AC104668 | AC041008 | AC015719 | AC092455 | NT 022135 |           |
| BDP1   | PTPN18         | 26469                 | 2                    | 2q21.2               | N.D.                                       |                                   | AC068137                     |          |          |          |          | NT 032991 |           |
| IA2  | PTPRN          | 5798                  | 2                    | 2q35                 | 2q35                                       | Lan et al, Morahan et al          | AC114803                     | AC060820 | AF042285 |          |          | NT 005403 |           |
| PTPgamma   | PTPRG          | 5793                  | 3                    | 3p14.2               | 3p21                                       | Laforgia et al                    | AC092502                     | AC024885 |          |          |          | NT 005999 |           |
| HDPTP  | PTPN23         | 25930                 | 3                    | 3p21.31              | 3p21.3                                     | Toyooka et al                     | AC099778                     | AC023230 |          |          |          | NT 022567 |           |
| PTPBAS   | PTPN13         | 5783                  | 4                    | 4q21.3               | 4q21.3                                     | Inazawa et al, Maaqdenberg et al  | AC105413                     | AC007525 | AC079237 |          |          | NT 006204 |           |
| PTP kappa  | PTPRK          | 5796                  | 6                    | 6q22.33              | Chr 6                                      | Yang et al                        | AL035470                     | AL035465 |          |          |          | NT 025741 |           |
| PEST   | PTPN12         | 5782                  | 7                    | 7q11.23              | 7q11.23                                    | Takekawa et al, Charest et al     | AC006451                     | AC090421 |          |          |          | NT 007933 |           |
| PTPzeta  | PTPRZ1         | 5803                  | 7                    | 7q31.31              | 7q31.3                                     | Ariyama et al, Morton et al       | AC006020                     | AC073471 |          |          |          | NT 007933 |           |
| IA2beta  | PTPRN2         | 5799                  | 7                    | 7q36.3               | 7q36 (7q22-pter)                           | Morahan et al, (Jiang et al)      | AC093856                     | AC005481 | AC006372 | AC006321 | AC079590 | NT 028233 |           |
| PTPdelta   | PTPRD          | 5789                  | 9                    | 9p24.1               | 9p24                                       | Hasegawa et al                    | AL445926                     | AC026466 | AI590397 | AL391275 |          | NT 008413 |           |
| PTPH1  | PTPN3          | 5774                  | 9                    | 9q31.3               | 9q31                                       | Itoh et al                        | AL359963                     | AL450025 | AC013568 | AC026568 |          | NT 017568 |           |
| PTP Typ  | PTPN20*        | 26095                 | 10                   | 10q11.22             | N.D.                                       |                                   | AL672108                     | AL450334 | AC026739 | AL358791 |          | NT 031847 |           |
| PTP epsilon  | PTPRE          | 5791                  | 10                   | 10q26.2              | 10q26                                      | Helson et al, Melhado et al       | AL390236                     |          |          |          |          | NT 008818 |           |
| DEP1   | PTPRJ          | 5795                  | 11                   | 11p11.2              | 11p11.2                                    | Honda et al, Borges et al         | AC026975                     |          |          |          |          | NT 008978 |           |
| STEP   | PTPN5          | 5776                  | 11                   | 11p15.1              | 11p15.2-p15.1                              | Li et al                          | AC103974                     | AC016750 |          |          |          | NT 009307 |           |
| GLEPP1   | PTPRO          | 5800                  | 12                   | 12p12.3              | 12p12-p13                                  | Wiggins et al                     | AC007542                     |          |          |          |          | NT 009714 |           |
| SHP1   | PTPN6          | 5777                  | 12                   | 12p13.31             | 12p13                                      | Plutsky et al                     | U47924                       | AC006512 | M86525   |          |          | NT 035206 |           |
| PCPTP1   | PTPRR          | 5801                  | 12                   | 12q15                | 12q15                                      | Bektas et al                      | AC083809                     | AC090676 | AC015544 | AC090670 | AC055123 | NT 035225 |           |
| PTPbeta  | PTPRB          | 5787                  | 12                   | 12q15                | 12q15-q21                                  | Harder et al                      | AC025569                     | AC083809 | AC011053 | AC015544 |          | NT 009540 |           |
| PTPS31   | PTPGMC1*       | 8680                  | 12                   | 12q21.31             | 12q15                                      | Wright et al                      | AC074031                     | AC025568 | AC078825 |          |          | NT 019546 |           |
| SHP2   | PTPN11         | 5781                  | 12                   | 12q24.13             | 12q24.1-q24.3                              | Dechert et al, Isobe et al        | AC004216                     | AC004086 |          |          |          | NT 009770 |           |
| PTPD1  | PTPN21         | 11099                 | 14                   | 14q31.3-q32.11       | N.D.                                       |                                   | AL162171                     | AL049834 | AL353786 |          |          | NT 026437 |           |
| MEG2   | PTPN9          | 5780                  | 15                   | 15q24.2              | N.D.                                       |                                   | AC105036                     | AC016402 | AC009712 | AC012527 |          | NT 024654 |           |
| TCPTP  | PTPN2          | 5771                  | 18                   | 18p11.21             | Chr 18                                     | Sakaguchi et al                   | AP001077                     | AC007734 | AP002449 | AC067860 | AC069433 | NT 010859 |           |
| PTPmu  | PTPRM          | 5797                  | 18                   | 18p11.23             | 18p11.2                                    | Suijkerbuijk et al, Gebbink et al | AP001094                     | AC021310 | AC006566 | AC069097 | AC023663 | AP001078  | NT 010859 |
| PTPsiigma  | PTPRS          | 5802                  | 19                   | 19p13.3              | 19p13.3                                    | Wagner et al                      | AC118535                     | AC005788 |          |          |          | NT 011255 |           |
| SAP1   | PTPRH          | 5794                  | 19                   | 19q13.42             | 19q13.4                                    | Matozaki et al, Marnaros et al    | AC010819                     | AC010327 |          |          |          | NT 011225 |           |
| PTPalpha   | PTPRA          | 5786                  | 20                   | 20p13                | 20p12-pter                                 | Rao et al                         | AL121905                     | AL138803 |          |          |          | NT 011387 |           |
| PTPrho   | PTPRT          | 11122                 | 20                   | 20q12-q13.11         | Chr 20                                     | McAndrew et al                    | AL024473                     | AL049812 |          |          |          | NT 011362 |           |
| PTPIB  | PTPN1          | 5770                  | 20                   | 20q13.13             | 20q13.1-q13.2                              | Brown-Shimer et al, Forsell et al | AL133230                     |          |          |          |          | NT 011362 |           |
| <b>PTP pseudogenes with exon-like structure</b>                    |                |                       |                      |                      |  |                                   |                              |          |          |          |          |           |           |
| SHP3-P1  | N.A.           | N.A.                  | 1                    | 1p36.33              | N.D.                                       |                                   | AL390719                     |          |          |          |          | NT 004350 |           |
| PTPdelta-P5  | N.A.           | N.A.                  | 5                    | 5q23.1               | N.D.                                       |                                   | AC073538                     | AC114322 |          |          |          | NT 030685 |           |
| <b>PTP pseudogenes (retrotransposed intronless genes)</b>          |                |                       |                      |                      |  |                                   |                              |          |          |          |          |           |           |
| TCPTP-P1   | N.A.           | N.A.                  | 1                    | 1q25.2               | 1q22-q24                                   | Johnson et al                     | AL162255                     |          |          |          |          | NT 004487 |           |
| TCPTP-P13  | N.A.           | N.A.                  | 13                   | 13q12.3              | 13q12-q13                                  | Johnson et al                     | AL353648                     | AL138681 |          |          |          | NT 009799 |           |
| SHP2-P3  | N.A.           | N.A.                  | 3                    | 3q13.12              | 3q13.1-q13.2                               | Dechert et al                     | AC074043                     |          |          |          |          | NT 019350 |           |
| SHP2-P4  | N.A.           | N.A.                  | 4                    | 4q21.22              | 4q21                                       | Dechert et al                     | AC067942                     | AC027573 |          |          |          | NT 006328 |           |
| SHP2-P5  | N.A.           | N.A.                  | 5                    | 5p14.2               | 5p14                                       | Dechert et al                     | AC010460                     |          |          |          |          | NT 006547 |           |
| SHP2-P6  | N.A.           | N.A.                  | 6                    | 6q23.3               | 6q23-6q24                                  | Dechert et al                     | AL356234                     | AC058810 | AC068118 |          |          | NT 025741 |           |
| SHP2-P8  | N.A.           | N.A.                  | 8                    | 8q12.1               | 8q12                                       | Dechert et al                     | AC009927                     | AC020782 |          |          |          | NT 008183 |           |
| Meg1-P8  | N.A.           | N.A.                  | 8                    | 8p23.1               | N.D.                                       |                                   | AF287957                     | AC009632 | AC091099 |          |          | NT 023736 |           |
| PTPalpha-P9  | N.A.           | N.A.                  | 9                    | 9q21.33              | N.D.                                       |                                   | AL137849                     | AL450106 |          |          |          | NT 023935 |           |
| <b>Other PTP-like sequences not present in assembly (Build 33)</b> |                |                       |                      |                      |  |                                   |                              |          |          |          |          |           |           |
| PTP-like   | N.A.           | N.A.                  | 4                    | N.A.                 | N.D.                                       |                                   | AC040993                     |          |          |          |          | N.A.      |           |

\*Interim gene symbols. Not officially approved by the HUGO gene nomenclature

Accession numbers in yellow are draft-quality sequences not used in the current genome assembly (Build 33)  
See manuscript for discussion of accession numbers for PTPOST

### Summary of accession numbers retrieved by our genome-wide search which were not classical PTPs

| PTP  |                |                       | Chromosomal location & PubMed |                      |                          |                              | Accession numbers |          |                    | Other links |  |
|--|----------------|-----------------------|-------------------------------|----------------------|--------------------------|------------------------------|-------------------|----------|--------------------|-------------|--|
| Name   | Gene<br>Symbol | Locus ID<br>LocusLink | Chr.                          | Assembly<br>Build 31 | PubMed<br>PubMed         | Genomic clones ID<br>GenBank |                   |          | Unigene<br>Unigene | GDB<br>GDB  |  |
| <b>PTP gene annotation without sequence information</b>  |                |                       |                               |                      |                          |                              |                   |          |                    |             |  |
| PTPRZ2   | PTPRZ2         | 5804                  |                               |                      | Onyango et al            |                              |                   |          |                    | 6763972     |  |
| PTPN8  | PTPN8          | 5779                  |                               |                      |                          |                              |                   |          |                    |             |  |
| PTPRQ  | PTPRQ          | 23628                 |                               |                      |                          |                              |                   |          |                    |             |  |
| PTPN17   | PTPN17         | 5785                  |                               |                      |                          |                              |                   |          |                    |             |  |
| <b>PTP gene symbols assigned to non-classical PTP sequences</b>  |                |                       |                               |                      |                          |                              |                   |          |                    |             |  |
| PTPLA  | PTPLA          | 9200                  | 10                            | 10p12.33             | Uwanogho et al, Li et al | AF114494                     |                   |          | Hs.114062          | 9955456     |  |
| PTPLB  | PTPLB          | 9199                  | 3q21                          | 3q21.1               | Uwanogho et al           | AC023165                     | AC020631          | AC084039 | AC025571           | 9955218     |  |
| PTPLC  | PTPLC          | 9198                  |                               | Not present          | Uwanogho et al           | Not known                    |                   |          |                    | 9955217     |  |
| <b>False positive hits from our genome-wide PTP homology search including hits to dual-specificity phosphatases (DSPs)</b> |                |                       |                               |                      |                          |                              |                   |          |                    |             |  |
| Weak PTP motif   |                |                       | 8                             | 8p22                 |                          | AC090420                     | AC087821          | AC024929 | AC024037           |             |  |
| Weak PTP motif   |                |                       | 12                            | 12q21.33             |                          | AC025034                     |                   |          |                    |             |  |
| Weak PTP motif   |                |                       | ?                             | Not present          |                          | AC013659                     |                   |          |                    |             |  |
| Not a PTP  |                |                       | 1                             | 1p32.3               |                          | AL354778                     |                   |          |                    |             |  |
| Not a PTP  |                |                       | 1                             | Not present          |                          | AL359084                     |                   |          |                    |             |  |
| Not a PTP  |                |                       | 3                             | 3q28                 |                          | AC063939                     |                   |          |                    |             |  |
| Not a PTP  |                |                       | 4                             | 4q32.3               |                          | AC021151                     |                   |          |                    |             |  |
| Not a PTP  |                |                       | 10                            | 10q23.31             |                          | AL356073                     | AP001849          |          |                    |             |  |
| Not a PTP  |                |                       | 11                            | 11q11                |                          | AC027239                     | AP001998          |          |                    |             |  |
| Not a PTP  |                |                       | 18                            | Not present          |                          | AC090410                     |                   |          |                    |             |  |
| DSP  | DUSP2          | 1844                  | 2                             | 2q11.2               |                          | AC012307                     |                   |          |                    |             |  |
| DSP  |                |                       | 7                             | 7p12.3               |                          | AC006024                     | AC004899          |          |                    |             |  |
| DSP  | DUSP4          | 1846                  | 8                             | 8p12                 |                          | AC055851                     | AC024678          | AC084262 | AC020588           |             |  |
| DSP  |                |                       | 8p12                          | Not present          |                          | AC090140                     |                   |          |                    |             |  |
| DSP  |                |                       | 9                             | 9p13.3               |                          | AL356489                     |                   |          |                    |             |  |
| DSP  | DUSP14         | 11072                 | 17                            | 17q12                |                          | AC004099                     |                   |          |                    |             |  |

Accession numbers in yellow are draft-quality sequences not used in the current genome assembly (Build 31)



Table S2 (Supplement to Table 2 in manuscript)

## Genomic annotation of PTP genes - Hyperlinked database

| Name        | Ref Sequences             |                                 | Annotated Gene Information         |                                    |                                  |                                 |                                 |   |                             | Mouse Ortholog               |                                    |
|-------------|---------------------------|---------------------------------|------------------------------------|------------------------------------|----------------------------------|---------------------------------|---------------------------------|---|-----------------------------|------------------------------|------------------------------------|
|             | PTP                       | mRNA<br><a href="#">Genbank</a> | Protein<br><a href="#">Genbank</a> | GeneSymbol<br><a href="#">Home</a> | Locus ID<br><a href="#">Home</a> | Unigene<br><a href="#">Home</a> | euGene<br><a href="#">Home</a>  | Ensembl gene ID<br><a href="#">Home</a> | GDB<br><a href="#">Home</a> | OMIM<br><a href="#">Home</a> | GeneSymbol<br><a href="#">Home</a> |
| hLyPTP      | <a href="#">NM_015967</a> | <a href="#">NP_057051</a>       | <a href="#">PTPN22</a>             | <a href="#">26191</a>              | <a href="#">Hs.87860</a>         | <a href="#">26191</a>           | <a href="#">ENSG00000134242</a> | <a href="#">11507553</a>                | <a href="#">606986</a>      | Ptpn8                        | <a href="#">19260</a>              |
| hLAR        | <a href="#">NM_002840</a> | <a href="#">NP_002831</a>       | <a href="#">PTPRF</a>              | <a href="#">5792</a>               | <a href="#">Hs.75216</a>         | <a href="#">5792</a>            | <a href="#">ENSG00000142949</a> | <a href="#">120138</a>                  | <a href="#">179590</a>      | Ptpfr                        | <a href="#">19268</a>              |
| hPTPlamda   | <a href="#">NM_005704</a> | <a href="#">NP_005695</a>       | <a href="#">PTPRU</a>              | <a href="#">10076</a>              | <a href="#">Hs.19718</a>         | <a href="#">10076</a>           | <a href="#">ENSG00000060656</a> | <a href="#">9954970</a>                 | <a href="#">602454</a>      | Ptpri                        | <a href="#">19273</a>              |
| hCD45       | <a href="#">NM_002838</a> | <a href="#">NP_002829</a>       | <a href="#">PTPRC</a>              | <a href="#">5788</a>               | <a href="#">Hs.170121</a>        | <a href="#">5788</a>            | <a href="#">ENSG00000081237</a> | <a href="#">119768</a>                  | <a href="#">151460</a>      | Ptprc                        | <a href="#">19264</a>              |
| hHePTP      | <a href="#">NM_002832</a> | <a href="#">NP_002823</a>       | <a href="#">PTPN7</a>              | <a href="#">5778</a>               | <a href="#">Hs.35</a>            | <a href="#">5778</a>            | <a href="#">ENSG00000143851</a> | <a href="#">135507</a>                  | <a href="#">176889</a>      | Ptpn7                        | <a href="#">170476</a>             |
| hPTP-OST    | N.A.                      | N.A.                            | N.A.                               | N.A.                               | N.A.                             | N.A.                            | N.A.                            | N.A.                                    | N.A.                        | Ptprv                        | <a href="#">13924</a>              |
| hPTPD2      | <a href="#">NM_005401</a> | <a href="#">NP_005392</a>       | <a href="#">PTPN14</a>             | <a href="#">5784</a>               | <a href="#">Hs.159238</a>        | <a href="#">5784</a>            | <a href="#">ENSG00000065995</a> | <a href="#">454485</a>                  | <a href="#">603155</a>      | Ptpn14                       | <a href="#">19250</a>              |
| hBDP1       | <a href="#">NM_014369</a> | <a href="#">NP_055184</a>       | <a href="#">PTPN18</a>             | <a href="#">26469</a>              | <a href="#">Hs.278597</a>        | <a href="#">26469</a>           | <a href="#">ENSG00000072135</a> | <a href="#">10795928</a>                | <a href="#">606587</a>      | Ptpn18                       | <a href="#">19253</a>              |
| hMEG1       | <a href="#">NM_002830</a> | <a href="#">NP_002821</a>       | <a href="#">PTPN4</a>              | <a href="#">5775</a>               | <a href="#">Hs.73826</a>         | <a href="#">5775</a>            | <a href="#">ENSG00000088179</a> | <a href="#">131387</a>                  | <a href="#">176878</a>      | Ptpn4                        | <a href="#">19258</a>              |
| hIA2        | <a href="#">NM_002846</a> | <a href="#">NP_002837</a>       | <a href="#">PTPRN</a>              | <a href="#">5798</a>               | <a href="#">Hs.89655</a>         | <a href="#">5798</a>            | <a href="#">ENSG00000054356</a> | <a href="#">454048</a>                  | <a href="#">601773</a>      | Ptpn                         | <a href="#">19275</a>              |
| hHDPTP      | <a href="#">NM_015466</a> | <a href="#">NP_056281</a>       | <a href="#">PTPN23</a>             | <a href="#">25930</a>              | <a href="#">Hs.25524</a>         | <a href="#">25930</a>           | <a href="#">ENSG00000076201</a> | <a href="#">11507555</a>                | <a href="#">606584</a>      | N.A.                         | N.A.                               |
| hPTPgamma   | <a href="#">NM_002841</a> | <a href="#">NP_002832</a>       | <a href="#">PTPRG</a>              | <a href="#">5793</a>               | <a href="#">Hs.89627</a>         | <a href="#">5793</a>            | <a href="#">ENSG00000144724</a> | <a href="#">127351</a>                  | <a href="#">176886</a>      | Ptprg                        | <a href="#">19270</a>              |
| hPTPBAS     | <a href="#">NM_006264</a> | <a href="#">NP_006255</a>       | <a href="#">PTPN13</a>             | <a href="#">5783</a>               | <a href="#">Hs.211595</a>        | <a href="#">5783</a>            | N.A.                            | <a href="#">306348</a>                  | <a href="#">600267</a>      | Ptpn13                       | <a href="#">19249</a>              |
| hPTPkappa   | <a href="#">NM_002844</a> | <a href="#">NP_002835</a>       | <a href="#">PTPRK</a>              | <a href="#">5796</a>               | <a href="#">Hs.79005</a>         | <a href="#">5796</a>            | <a href="#">ENSG00000152894</a> | <a href="#">9834527</a>                 | <a href="#">602545</a>      | Ptprk                        | <a href="#">19272</a>              |
| hPEST       | <a href="#">NM_002835</a> | <a href="#">NP_002826</a>       | <a href="#">PTPN12</a>             | <a href="#">5782</a>               | <a href="#">Hs.62</a>            | <a href="#">5782</a>            | <a href="#">ENSG00000127947</a> | <a href="#">136846</a>                  | <a href="#">600079</a>      | Ptpn12                       | <a href="#">19248</a>              |
| hPTPzeta    | <a href="#">NM_002851</a> | <a href="#">NP_002842</a>       | <a href="#">PTPRZ1</a>             | <a href="#">5803</a>               | <a href="#">Hs.78867</a>         | <a href="#">5803</a>            | <a href="#">ENSG00000106278</a> | <a href="#">127353</a>                  | <a href="#">176891</a>      | Ptprz1                       | <a href="#">19283</a>              |
| hIA2beta    | <a href="#">NM_002847</a> | <a href="#">NP_002838</a>       | <a href="#">PTPRN2</a>             | <a href="#">5799</a>               | <a href="#">Hs.74624</a>         | <a href="#">5799</a>            | <a href="#">ENSG00000002748</a> | <a href="#">9785772</a>                 | <a href="#">601698</a>      | Ptpn2                        | <a href="#">19276</a>              |
| hPTPdelta   | <a href="#">NM_002839</a> | <a href="#">NP_002830</a>       | <a href="#">PTPRD</a>              | <a href="#">5789</a>               | <a href="#">Hs.158112</a>        | <a href="#">5789</a>            | <a href="#">ENSG00000099228</a> | <a href="#">131384</a>                  | <a href="#">601598</a>      | Ptprd                        | <a href="#">19266</a>              |
| hPTPH1      | <a href="#">NM_002829</a> | <a href="#">NP_002820</a>       | <a href="#">PTPN3</a>              | <a href="#">5774</a>               | <a href="#">Hs.153932</a>        | <a href="#">5774</a>            | <a href="#">ENSG00000070159</a> | <a href="#">131386</a>                  | <a href="#">176877</a>      | Ptpn3                        | <a href="#">19257</a>              |
| hPTPTyp     | <a href="#">NM_015605</a> | <a href="#">NP_056420</a>       | <a href="#">PTPN20*</a>            | <a href="#">26095</a>              | N.A.                             | N.A.                            | <a href="#">ENSG00000126542</a> | N.A.                                    | N.A.                        | Ptpn20                       | <a href="#">19256</a>              |
| hPTPepsilon | <a href="#">NM_006504</a> | <a href="#">NP_006495</a>       | <a href="#">PTPRE</a>              | <a href="#">5791</a>               | <a href="#">Hs.31137</a>         | <a href="#">5791</a>            | <a href="#">ENSG00000132334</a> | <a href="#">131385</a>                  | <a href="#">600926</a>      | Ptpre                        | <a href="#">19267</a>              |
| hDEP1       | <a href="#">NM_002843</a> | <a href="#">NP_002834</a>       | <a href="#">PTPRJ</a>              | <a href="#">5795</a>               | <a href="#">Hs.171992</a>        | <a href="#">5795</a>            | <a href="#">ENSG00000149177</a> | <a href="#">385040</a>                  | <a href="#">600925</a>      | Ptpri                        | <a href="#">19271</a>              |
| hSTEP       | <a href="#">NM_032781</a> | <a href="#">NP_116170</a>       | <a href="#">PTPN5</a>              | <a href="#">5776</a>               | <a href="#">Hs.248318</a>        | <a href="#">5776</a>            | <a href="#">ENSG00000110786</a> | <a href="#">131388</a>                  | <a href="#">176879</a>      | Ptpn5                        | <a href="#">19259</a>              |
| hSHP1       | <a href="#">NM_002831</a> | <a href="#">NP_002822</a>       | <a href="#">PTPN6</a>              | <a href="#">5777</a>               | <a href="#">Hs.63489</a>         | <a href="#">5777</a>            | <a href="#">ENSG00000111679</a> | <a href="#">131389</a>                  | <a href="#">176883</a>      | Hcph                         | <a href="#">15170</a>              |
| hGLEPP1     | <a href="#">NM_030667</a> | <a href="#">NP_109592</a>       | <a href="#">PTPRO</a>              | <a href="#">5800</a>               | <a href="#">Hs.258609</a>        | <a href="#">5800</a>            | <a href="#">ENSG00000084474</a> | <a href="#">454477</a>                  | <a href="#">600579</a>      | Ptpro                        | <a href="#">19277</a>              |
| hPCPTP1     | <a href="#">NM_002849</a> | <a href="#">NP_002840</a>       | <a href="#">PTPRR</a>              | <a href="#">5801</a>               | <a href="#">Hs.198288</a>        | <a href="#">5801</a>            | <a href="#">ENSG00000111585</a> | <a href="#">9835737</a>                 | <a href="#">602853</a>      | Ptprr                        | <a href="#">19279</a>              |
| hPTPbeta    | <a href="#">NM_002837</a> | <a href="#">NP_002828</a>       | <a href="#">PTPRB</a>              | <a href="#">5787</a>               | <a href="#">Hs.123641</a>        | <a href="#">5787</a>            | <a href="#">ENSG00000127329</a> | <a href="#">127352</a>                  | <a href="#">176882</a>      | Ptprb                        | <a href="#">12263</a>              |
| hPTPS31     | <a href="#">AF169351</a>  | <a href="#">AAD50277</a>        | <a href="#">PTPGMC1*</a>           | <a href="#">8680</a>               | N.A.                             | <a href="#">8680</a>            | <a href="#">ENSG00000091041</a> | <a href="#">9956257</a>                 | <a href="#">603317</a>      | N.A.                         | N.A.                               |
| hSHP2       | <a href="#">NM_002834</a> | <a href="#">NP_002825</a>       | <a href="#">PTPN11</a>             | <a href="#">5781</a>               | <a href="#">Hs.22868</a>         | <a href="#">5781</a>            | <a href="#">ENSG00000089131</a> | <a href="#">137093</a>                  | <a href="#">176876</a>      | Ptpn11                       | <a href="#">19247</a>              |
| hPTPD1      | <a href="#">NM_007039</a> | <a href="#">NP_008970</a>       | <a href="#">PTPN21</a>             | <a href="#">11099</a>              | <a href="#">Hs.155693</a>        | <a href="#">11099</a>           | <a href="#">ENSG00000070778</a> | <a href="#">9956481</a>                 | <a href="#">603271</a>      | Ptpn21                       | <a href="#">24000</a>              |
| hMEG2       | <a href="#">NM_002833</a> | <a href="#">NP_002824</a>       | <a href="#">PTPN9</a>              | <a href="#">5780</a>               | <a href="#">Hs.147663</a>        | <a href="#">5780</a>            | <a href="#">ENSG00000169410</a> | <a href="#">132399</a>                  | <a href="#">600768</a>      | Ptpn9                        | <a href="#">56294</a>              |
| hPTPmu      | <a href="#">NM_002845</a> | <a href="#">NP_002836</a>       | <a href="#">PTPRM</a>              | <a href="#">5797</a>               | <a href="#">Hs.154151</a>        | <a href="#">5797</a>            | <a href="#">ENSG00000069927</a> | <a href="#">128093</a>                  | <a href="#">176888</a>      | Ptpm                         | <a href="#">19274</a>              |
| hTCPTP      | <a href="#">NM_002828</a> | <a href="#">NP_002819</a>       | <a href="#">PTPN2</a>              | <a href="#">5771</a>               | <a href="#">Hs.82829</a>         | <a href="#">5771</a>            | <a href="#">ENSG00000128772</a> | <a href="#">128098</a>                  | <a href="#">176887</a>      | Ptpn2                        | <a href="#">19255</a>              |
| hPTPsigma   | <a href="#">NM_002850</a> | <a href="#">NP_002841</a>       | <a href="#">PTPRS</a>              | <a href="#">5802</a>               | <a href="#">Hs.159534</a>        | <a href="#">5802</a>            | <a href="#">ENSG00000105426</a> | <a href="#">555925</a>                  | <a href="#">601576</a>      | Ptprs                        | <a href="#">19280</a>              |
| hSAP1       | <a href="#">NM_002842</a> | <a href="#">NP_002833</a>       | <a href="#">PTPRH</a>              | <a href="#">5794</a>               | <a href="#">Hs.179770</a>        | <a href="#">5794</a>            | <a href="#">ENSG00000080031</a> | <a href="#">305504</a>                  | <a href="#">602510</a>      | N.A.                         | N.A.                               |
| hPTPalpha   | <a href="#">NM_002836</a> | <a href="#">NP_002827</a>       | <a href="#">PTPRA</a>              | <a href="#">5786</a>               | <a href="#">Hs.26045</a>         | <a href="#">5786</a>            | <a href="#">ENSG00000037980</a> | <a href="#">126732</a>                  | <a href="#">176884</a>      | Ptpra                        | <a href="#">19262</a>              |
| hPTPrho     | <a href="#">NM_007050</a> | <a href="#">NP_008981</a>       | <a href="#">PTPRT</a>              | <a href="#">11122</a>              | <a href="#">Hs.225952</a>        | <a href="#">11122</a>           | <a href="#">ENSG00000087530</a> | <a href="#">9785461</a>                 | N.A.                        | Ptprt                        | <a href="#">19281</a>              |
| hPTP1B      | <a href="#">NM_002827</a> | <a href="#">NP_002818</a>       | <a href="#">PTPN1</a>              | <a href="#">5770</a>               | <a href="#">Hs.155894</a>        | <a href="#">5770</a>            | <a href="#">ENSG00000063920</a> | <a href="#">126728</a>                  | <a href="#">176885</a>      | Ptpn1                        | <a href="#">10246</a>              |

\*Interim gene symbols. Not officially approved by the HUGO gene nomenclature

RefSeq sequences in yellow are predicted sequences supported by partial mRNA and ESTs

Note, there is no RefSeq sequences available for human PTSP31 and human PTP-OST

Table S3 (Website database)

# PTP isoforms - Alternative splicing enhances the diversity of PTP proteins

| PTP         | Isoform   | Variants     | Ref Sequences | Accession numbers | Comments and Analysis (Revised RefSeq Annotation) |  |                       |
|-------------|-----------|--------------|---------------|-------------------|---|--|-----------------------|
| hLypTP      | Lyp1      | Variant (1)  | NP_057051     | NM_015967         | AF001846,AF077031,U69700                          | This variant (1) encodes the longer isoform (1) which is 116 aa longer than isoform 2 and has a distinct C-terminus.                                     |                       |
|             |           | Variant (2)  | NP_036543     | NM_012411         | AF001847  | This variant (2) uses an alternative splice site within the coding region, resulting in a frameshift and use of an upstream stop codon, as compared to   |                       |
|             | Lyp2      | Variant (3)  | N.A.          | N.A.              | AF150732  | No genomic evidence for this variant - the unique part of this mRNA does not align to genomic sequence   |                       |
|             |           | Variant (4)  | N.A.          | N.A.              | BC017785  | Predicted protein for this mRNA is nonsense  |                       |
| hLAR        |           | Variant (1)  | NP_002831     | NM_002840         | Y00815,BI711143,BC012102,BC029486                 | This variant (1) contains an extra exon when compared to variant 2. It thus encodes a protein that has an extra 9 aa (WRPEESEDY) in the extracell        |                       |
|             |           | Variant (2)  | NP_569707     | NM_130440         | BQ920757,BQ894845                                 | This variant (2) lacks an exon within the coding region when compared to variant 1. It thus encodes a protein that lacks a 9 aa present in isoform 1.    |                       |
|             |           | Variant(1)   | NP_573439     | NM_133178         | X97198,AK094849,BC033131,U73727                   | This variant (1) lacks an exon within the coding region when compared to variant 3. The translation remains in-frame, and thus results in a protein t    |                       |
| hPTPlamda   |           | Variant(2)   | NP_573438     | NM_133177         | U71075  | This variant (2) lacks two internal fragments, and contains an extra fragment within the coding region when compared to variant 3. The translation r     |                       |
|             |           | Variant(3)   | NP_005698     | NM_005704         | X95712  | This variant (3) encodes the longest isoform (3).  |                       |
|             |           | Variant (1)  | NP_002829     | NM_002838         | Y00062,Y00638                                     | This variant (1) encodes the longest isoform (1) (includes exon 4, 5 & 6 which are called exon A, B & C in the literature).                              |                       |
| hCD45       | CD45RABC  | Variant (2)  | NP_563578     | NM_080921         | Y00062  | This variant (2) lacks exon 4, 5 & 6 within the coding region when compared to variant 1. It thus encodes a protein that lacks a 161 aa internal fragm   |                       |
|             |           | Variant (3)  | NP_563579     | NM_080922         | BC014239,Y00062                                   | This variant (3) lacks exon 6 within the coding region when compared to variant 1. It thus encodes a protein that lacks a 48 aa internal fragment, as    |                       |
|             |           | Variant (4)  | NP_563580     | NM_080923         | BC017863,Y00062                                   | This variant (4) has a unique 3' sequence when compared to variant 1. The first 31 aa of isoform 4 are identical to isoform 1, and the 3 aa at the C-    |                       |
|             |           | Variant (5)  | N.A.          | N.A.              |   | Yu et al (2002)  |                       |
| hCD45       | CD45RAB   | Variant (6)  | N.A.          | N.A.              |   | Fukuhara K et al (2002)  |                       |
|             |           | Variant (7)  | N.A.          | N.A.              |   | Fukuhara K et al (2002)  |                       |
|             |           | Other Variar | N.A.          | N.A.              |   | Hermiston ML, Xu Z, Weiss A (Variants of exon 7, 8 and 10)   |                       |
|             |           | Variant (1)  | NP_002823     | NM_002832         | BC001746,BG340453,D11327,M64322,S78090            | This variant (1) contains a different 5' region, which includes a part of the coding sequence when compared to variant 2. It thus encodes a protein th   |                       |
| hHePTP      |           | Variant (2)  | NP_542155     | NM_080588         | BC001746  | This variant (2) contains an alternate 5' region, which includes an additional in-frame translation start codon, as compared to variant 1. It thus encod |                       |
|             |           | Variant (3)  | NP_542156     | NM_080589         | D11327  | This variant (3) lacks an internal 3' UTR region, and encodes an identical protein, as compared to variant 1   |                       |
|             |           | Variant (4)  | N.A.          | N.A.              | AF394064  | This variant (4) contains an alternate 5' region which includes part of the coding sequence when compared to variant 1. It thus encodes a protein th     |                       |
|             |           | Variant (1)  | N.A.          | N.A.              |   | Morrison et al, Lee et al, Mauro et al, Lathrop et al  |                       |
| hOST-PTP    | hPTPD2    | Variant (1)  | NP_005392     | NM_005401         | BC017300,X82676                                   | Supported by alignment with both mRNA and ESTs   |                       |
|             |           | Variant (2)  | NP_055184     | NM_014369         | BI261717,X79568,BC024280                          | Supported by alignment with both mRNA and ESTs   |                       |
|             |           | Variant (3)  | NP_002821     | NM_002830         | BC010674,M68941                                   | Supported by alignment with both mRNA and ESTs   |                       |
|             |           | Variant (4)  | NP_002837     | NM_002846         | BC007713,L18983,X62899                            | Supported by alignment with both mRNA and ESTs   |                       |
| hBDP1       | hMEG1     | Variant (1)  | NP_056281     | NM_015466         | AB025154,AB049004,AK05515,AL110210,AF2906         | Supported by alignment with both mRNA and ESTs   |                       |
|             |           | Variant (2)  | NP_002832     | NM_002841         | AI872451,L09247,AI872451,X54132                   | Supported by alignment with both mRNA and ESTs   |                       |
|             |           | Variant (1)  | NP_542414     | NM_080683         | D21209  | This variant (1) lacks an internal fragment within the coding region when compared to variant 4. The translation remains in frame, and the encoded       |                       |
|             |           | Variant (2)  | NP_006255     | NM_006264         | D21210  | This variant (2) lacks an internal exon (GMTMHSSGNSSSQVPLKEN) within the coding region when compared to variant 4. The translation remains               |                       |
| hPTPIA2     | hHDPTP    | Variant (3)  | NP_542415     | NM_080684         | D21211  | This variant (3) lacks an internal fragment (2 consecutive exons) within the coding region when compared to variant 4. The translation remains in fra    |                       |
|             |           | Variant (4)  | NP_542416     | NM_080685         | D21209,U12128                                     | This variant (4) encodes the longest isoform (4).  |                       |
|             |           | Variant (1)  | NP_002835     | NM_002844         | BI755683,L77886,Z70660                            | Supported by alignment with both mRNA and ESTs   |                       |
|             |           | Variant (2)  | NP_002826     | NM_002835         | M93425,D13380                                     | Supported by alignment with both mRNA and ESTs   |                       |
| hPTPBAS     | hMEG1     | Variant (2)  | N.A.          | N.A.              | S69182,BG829296                                   | Supported by alignment with both mRNA and ESTs   |                       |
|             |           | Variant (1)  | NP_002842     | NM_002851         | M93426,U88967                                     | Supported by alignment with mRNA   |                       |
|             |           | Variant (1)  | NP_002838     | NM_002847         | U66702,AB002385,AF007555,BC030400                 | This variant (1) encodes the longest isoform (1).  |                       |
|             |           | Variant (2)  | NP_570857     | NM_130842         | U81561  | This variant (2) lacks an internal fragment within the coding region when compared to variant 1. The translation remains in-frame, and thus results ir   |                       |
| hPTPIA2beta | hPTPdelta | Variant (3)  | NP_570858     | NM_130843         | U65065,U81561                                     | This variant (3) lacks an internal fragment within the coding region when compared to variant 1. The translation remains in-frame, and thus results ir   |                       |
|             |           | Variant (1)  | NP_002830     | NM_002839         | L38929,X54133                                     | This variant (1) encodes the longest isoform (1).  |                       |
|             |           | Variant (2)  | NP_569075     | NM_130391         | L38929  | Pulido et al This variant (2) lacks two separate internal segments within the coding region. It thus encodes a protein that lacks a 9 aa, and a 4 aa int |                       |
|             |           | Variant (3)  | NP_569076     | NM_130392         | L38929  | This variant (3) lacks an internal segment within the coding region. It thus encodes a protein that lack a 9 aa internal fragment, as compared to isofo  |                       |
| hPTPH1      | hPTPgamma | Variant (4)  | NP_569077     | NM_130393         | L38929  | This variant (4) lacks an internal segment within the coding region. It thus encodes a protein that lacks a 411 aa internal fragment, and has one amin   |                       |
|             |           | Variant (1)  | NP_002820     | NM_002829         | M64572,W15441,S39392,S76309                       | Supported by alignment with both mRNA and ESTs   |                       |
|             |           | Variant (2)  | NP_056420     | NM_015605         | BC036539,CAB43248,AL050040                        | Supported by alignment with both mRNA and ESTs   |                       |
|             |           | Variant (1)  | NP_006495     | NM_006504         | BI559814,X54134                                   | This variant (1) contains a different 5' end region that includes a part of the coding region, when compared to variant 2. It thus encodes a protein the |                       |
| hPTPbeta    | RPTPc     | Variant (2)  | NP_569119     | NM_130435         | AJ315969,BI910569                                 | This variant (1) contains a different 5' end region that includes a part of the coding region, when compared to variant 2. It thus encodes a protein the |                       |
|             |           | Variant (3)  | N.A.          | N.A.              | AJ430580  | Wabakken et al (2002)  |                       |
|             |           | Variant (1)  | NP_002834     | NM_002843         | U10886,D37781,AL359057                            | supported by alignment with both mRNA and ESTs   |                       |
|             |           | Variant (2)  | NP_116170     | NM_032781         | U27831,AK090923,BC039897,AL832541                 | supported by alignment with both mRNA and ESTs   |                       |
| hSTEP       | hSHP1     | Variant (1)  | NP_002822     | NM_002831         | AH003242,BC002523,M77273,U15536                   | This variant (1) lacks an internal fragment within the coding region, which leads to a translation frame change when compared to variant 3. It encod     |                       |
|             |           | Variant (2)  | NP_536858     | NM_080548         | BC002523,U15537                                   | This variant (2) contains a different 5' end region including 5' UTR and a small portion of the coding region, and lacks an internal fragment within the |                       |
|             |           | Variant (3)  | NP_536859     | NM_080549         | AF178946,AFH003242,BC002523,U15536                | This variant (3) encodes the longest isoform (3).  |                       |
|             |           | Variant (1)  | NP_109592     | NM_030667         | U20489,Z48541,BC035960                            | This variant (1) encodes the longest isoform (a) known to date. The encoded protein has a large extracellular domain containing 8 repeats of a fibro     |                       |
|             |           | Variant (2)  | NP_002839     | NM_002848         | U20489,Z48541                                     | This variant (2) lacks an internal 84 nt exon compared to variant 1, resulting in an isoform (b) that is missing a cytoplasmic juxtamembrane region co   |                       |
|             |           | Variant (3)  | NP_109594     | NM_030669         | AF187043,Z48541                                   | This variant (3) has a different 5' UTR and a downstream in-frame start codon compared to variant 1. Compared to isoform a, the encoded isoform (        |                       |
| hGLEPP1     | hSHP1     | Variant (4)  | NP_109593     | NM_030668         | AF187044,Z48541                                   | This variant (4), compared to variant 1, has a different 5' UTR, has a downstream in-frame start codon, and lacks an internal 84 nt exon. Compared       |                       |
|             |           | Variant (5)  | NP_109596     | NM_030671         | AF152378,Z48541                                   | This variant (5), compared to variant 1, has a different 5' UTR, has a downstream in-frame start codon, and includes an additional sequence within t     |                       |
|             |           | Variant (6)  | NP_109595     | NM_030670         | AF187042,Z48541                                   | This variant (6), compared to variant 1, has a different 5' UTR, has a downstream in-frame start codon, lacks an internal 84 nt exon, and includes an    |                       |
|             |           | Variant (1)  | NP_002840     | NM_002849         | D64053  | This variant (1) contains a different 5' end region when compared to variant 2. It thus encodes a protein that has a longer N-terminus, as compared i    |                       |
|             |           | Variant (2)  | NP_570897     | NM_130846         | U77917  | This variant (2) contains a different 5' end region, and uses a downstream in-frame start codon, when compared to variant 1. The resulting protein is    |                       |
|             |           | Variant (1)  | NP_002828     | NM_002837         | BE042873,X54131                                   | supported by alignment with both mRNA and ESTs   |                       |
| hPCPTP1     | hPTPbeta  | Variant (1)  | S31F_Var1     | N.A.              | AR073855,I32039,AF169351                          | Andersen et al (2003)  |                       |
|             |           | Variant (2)  | S31F_Var2     | N.A.              | N.A.  | Andersen et al (2003)  |                       |
|             |           | Variant (3)  | S31F_Var3     | N.A.              | N.A.  | Andersen et al (2003)  |                       |
|             |           | Variant (4)  | S31C          | N.A.              | N.A.  | I32037   | Andersen et al (2003) |
|             |           | Variant (5)  | S31D          | N.A.              | N.A.  | I32035   | Andersen et al (2003) |
| hSHP2       | hPTPD1    | Variant (1)  | NP_002825     | NM_002834         | BE042873,X54131                                   | This variant (1) contains a different 3' end region, and encodes a longer isoform (1), as compared to variant 2.   |                       |
|             |           | Variant (2)  | NP_542168     | NM_080601         | BC008692,BF515187                                 | This variant (2) contains an alternate 3' end region, which includes a part of the coding region when compared to variant 1. It thus encodes a protein   |                       |
|             |           | Variant (1)  | NP_008970     | NM_007039         | AI800682,X79510                                   | supported by alignment with both mRNA and ESTs   |                       |
|             |           | Variant (1)  | NP_002824     | NM_002833         | M83738,BC010863                                   | supported by alignment with both mRNA and ESTs   |                       |
| hMEG2       | hPTPmu    | Variant (1)  | NP_002836     | NM_002845         | AA281524,X58288                                   | supported by alignment with both mRNA and ESTs   |                       |
|             |           | Variant (2)  | N.A.          | N.A.              | BE439911  | Supported by human and bovine ESTs - insertion of GGAGGAGCNSPSPREVSQ within the PTP domain   |                       |
|             |           | Variant (1)  | NP_002819     | NM_002828         | AW592324,BG699440,M25393                          | This variant (1) contains a different 3' region, and encodes the longest isoform (1), as compared to variant 2 and                                       |                       |
|             |           | Variant (2)  | NP_536347     | NM_080422         | BC008244,BC699440                                 | This variant (2) contains an alternate 3' region, which includes a part of the C-terminal coding region, when compared to variant 1. The resulting pro   |                       |
| hPTPsigma   | hSHP2     | Variant (3)  | NP_536348     | NM_080423         | BC016727,BC699440                                 | This variant (3) contains an alternate 3' region, which includes a part of the C-terminal coding region, when compared to variant 1. The resulting pro   |                       |
|             |           | Variant (1)  | NP_002841     | NM_002850         | U35234,BI461316,S78080,S78086                     | This variant (1) encodes the longest isoform (1).  |                       |
|             |           | Variant (2)  | NP_570924     | NM_130854         | BI461316,U35234                                   | This variant (2) lacks four internal fragments within the coding region when compared to variant 1. The translation remains in-frame, and thus result    |                       |
|             |           | Variant (3)  | NP_570923     | NM_130853         | U41727  | This variant (3) lacks four internal fragments within the coding region when compared to variant 1. The translation remains in-frame, and thus result    |                       |
| hSAP1       | hPTPdelta | Variant (4)  | NP_570925     | NM_130855         | U403125   | This variant (4) lacks three internal fragments within the coding region when compared to variant 1. The translation remains in-frame, and thus result   |                       |
|             |           | Variant (1)  | NP_002833     | NM_002842         | D15049  | supported by alignment with both mRNA and ESTs   |                       |
|             |           | Variant (1)  | NP_002827     | NM_002836         | M34668,AI284972                                   | This variant (1) contains a unique 5' UTR region when compared to other variants. The genomic exons forming the 5' end region of this transcript ar      |                       |
|             |           | Variant (2)  | NP_543030     | NM_080840         | BI597187,X54890                                   | This variant (2) contains a different 5' UTR region, and lacks an internal segment within the coding region, when compared to variant 1. The resultin    |                       |
| hPTPrho     | hPTPbeta  | Variant (3)  | NP_543031     | NM_080841         | M34668,X53364                                     | This variant (3) contains an extra internal segment in the 5' UTR region, and lacks an internal segment within the coding region, when compared to       |                       |
|             |           | Variant (1)  | NP_573400     | NM_133170         | AF043644,R50970                                   | This variant (1) contains an additional fragment within the coding region when compared to variant 2, and thus encodes a protein that contains an e      |                       |
|             |           | Variant (2)  | NP_008981     | NM_007050         | AF043644,R50970                                   | This variant (2) lacks a fragment within the coding region when compared to variant 1. The translation remains in-frame, and thus encodes a protein      |                       |
|             |           | Variant (1)  | NP_002818     | NM_002827         | AU117677,M33689                                   | This variant (1) is 435 aa long and is encoded by 10 exons. It differ in its exon 10 encoded C-terminal sequence (FLFNST*) from variant (2). Its m       |                       |
| hPTP1B      | hPTPbeta  | Variant (2)  | N.A.          | N.A.              | BU430170  | This variant (2) is 432 aa long and has an alternative termination codon in exon 9. It differ in its C-terminal  |                       |

Ref Sequences in yellow are predicted sequences supported by partial mRNA and ESTs

Table S4 (Website database)

## Genetic variation and disease annotation of PTP loci

| Name        |                         | Chr Location                    | OMIM                   | LocusLink             | Mitelman            | Morbid              | SNPs                | Chr aberrations in cancers |                     | PubMed and OMIM Search  | References   |
|-------------|-------------------------|---------------------------------|------------------------|-----------------------|---------------------|---------------------|---------------------|----------------------------|---------------------|---|--|
| PTP         | Gene                    | UCSC View                       | Home                   | Home                  | Home                | Home                | Home                | deletions                  | uplications         |   |  |
| hLyPTP      | <a href="#">PTPN22</a>  | <a href="#">1p13.2</a>          | <a href="#">606986</a> | <a href="#">26191</a> | <a href="#">Map</a> | <a href="#">Map</a> | <a href="#">Map</a> | <a href="#">Yes</a>        | -                   | Region associated with rearrangements in solid and hemopoietic tumors     | <a href="#">Cohen et al, Hill et al</a>  |
| hLAR        | <a href="#">PTPRE</a>   | <a href="#">1p34.2</a>          | <a href="#">179590</a> | <a href="#">5792</a>  | <a href="#">Map</a> | <a href="#">Map</a> | <a href="#">Map</a> | <a href="#">Yes</a>        | -                   | Frequently deleted in human neuroblastoma. Small cell lung cancer (Co     | <a href="#">Link et al, Harder et al, Zabolotny et al</a>                                      |
| hPTPlamda   | <a href="#">PTPRU</a>   | <a href="#">1p35.2</a>          | <a href="#">602454</a> | <a href="#">10076</a> | <a href="#">Map</a> | <a href="#">Map</a> | <a href="#">Map</a> | <a href="#">Yes</a>        | -                   | Parkinson, onset  |  |
| hCD45       | <a href="#">PTPRC</a>   | <a href="#">1q31.3</a>          | <a href="#">151460</a> | <a href="#">5788</a>  | <a href="#">Map</a> | <a href="#">Map</a> | <a href="#">Map</a> | -                          | -                   | Autoimmunity (SCID). Multiple sclerosis.Susceptibility to HIV-1 infection | <a href="#">Jacobsen et al, Vorechovsky et al, Barcellos et al, Kung et al, Tchilian et al</a> |
| hHePTP      | <a href="#">PTPN7</a>   | <a href="#">1q32.1</a>          | <a href="#">176889</a> | <a href="#">5778</a>  | <a href="#">Map</a> | <a href="#">Map</a> | <a href="#">Map</a> | <a href="#">Yes</a>        | <a href="#">Yes</a> | Non-Hodgkin lymphomas   |  |
| hPTPD2      | <a href="#">PTPN14</a>  | <a href="#">1q32.3</a>          | <a href="#">603155</a> | <a href="#">5784</a>  | <a href="#">Map</a> | <a href="#">Map</a> | <a href="#">Map</a> | <a href="#">Yes</a>        | <a href="#">Yes</a> |   |  |
| hBDP1       | <a href="#">PTPN18</a>  | <a href="#">2q21.1</a>          | N.A.                   | <a href="#">26469</a> | <a href="#">Map</a> | <a href="#">Map</a> | <a href="#">Map</a> | -                          | -                   |   |  |
| hMEG1       | <a href="#">PTPN4</a>   | <a href="#">2q14.2</a>          | <a href="#">176878</a> | <a href="#">5775</a>  | <a href="#">Map</a> | <a href="#">Map</a> | <a href="#">Map</a> | -                          | -                   |   |  |
| hPTPIA2     | <a href="#">PTPRN</a>   | <a href="#">2q35</a>            | <a href="#">601773</a> | <a href="#">5798</a>  | <a href="#">Map</a> | <a href="#">Map</a> | <a href="#">Map</a> | -                          | -                   | Autoantigens in type I insulin-dependent diabetes mellitus (IDDM),        | <a href="#">Cui et al</a>  |
| hHDPTP      | <a href="#">PTPN23</a>  | <a href="#">3p21.31</a>         | N.A.                   | <a href="#">25930</a> | <a href="#">Map</a> | <a href="#">Map</a> | <a href="#">Map</a> | <a href="#">Yes</a>        | -                   |   |  |
| hPTPgamma   | <a href="#">PTPRG</a>   | <a href="#">3p14.2</a>          | <a href="#">176886</a> | <a href="#">5793</a>  | <a href="#">Map</a> | <a href="#">Map</a> | <a href="#">Map</a> | <a href="#">Yes</a>        | -                   | 3p14.2 hot spot for alterations in lung cancer                            | <a href="#">LaForgia et al, Pitterle et al, Panagopoulos et al</a>                             |
| hPTPBAS     | <a href="#">PTPN13</a>  | <a href="#">4q21.3</a>          | <a href="#">600267</a> | <a href="#">5783</a>  | <a href="#">Map</a> | <a href="#">Map</a> | <a href="#">Map</a> | <a href="#">Yes</a>        | -                   | 4q21.3 frequently deleted in liver and ovarian cancers                    | <a href="#">Inazawa</a>  |
| hPTPkappa   | <a href="#">PTPRK</a>   | <a href="#">6q22.33</a>         | <a href="#">602545</a> | <a href="#">5796</a>  | <a href="#">Map</a> | <a href="#">Map</a> | <a href="#">Map</a> | <a href="#">Yes</a>        | -                   | Tumor supressor, frequently deleted in primary CNS lymphomas              | <a href="#">Zhang et al, Nakamura et al</a>  |
| hPEST       | <a href="#">PTPN12</a>  | <a href="#">7q11.23</a>         | <a href="#">600079</a> | <a href="#">5782</a>  | <a href="#">Map</a> | <a href="#">Map</a> | <a href="#">Map</a> | <a href="#">Yes</a>        | -                   | Aberrant transcripts in Colon cancer. Tumorigenesis ?                     | <a href="#">Takekawa et al</a>   |
| hPTPzeta    | <a href="#">PTPRZ1</a>  | <a href="#">7q31.31</a>         | <a href="#">176891</a> | <a href="#">5803</a>  | <a href="#">Map</a> | <a href="#">Map</a> | <a href="#">Map</a> | <a href="#">Yes</a>        | -                   |   |  |
| hPTPIA2beta | <a href="#">PTPRN2</a>  | <a href="#">7q36.3</a>          | <a href="#">601698</a> | <a href="#">5799</a>  | <a href="#">Map</a> | <a href="#">Map</a> | <a href="#">Map</a> | <a href="#">Yes</a>        | -                   | Autoantigens in type I insulin-dependent diabetes mellitus (IDDM),        | <a href="#">Cui et al</a>  |
| hPTPdelta   | <a href="#">PTPRD</a>   | <a href="#">9p24.1</a>          | <a href="#">601598</a> | <a href="#">5789</a>  | <a href="#">Map</a> | <a href="#">Map</a> | <a href="#">Map</a> | -                          | -                   |   |  |
| hPTPH1      | <a href="#">PTPN3</a>   | <a href="#">9q31.3</a>          | <a href="#">176877</a> | <a href="#">5774</a>  | <a href="#">Map</a> | <a href="#">Map</a> | <a href="#">Map</a> | <a href="#">Yes</a>        | -                   |   |  |
| hPTPtyp     | <a href="#">PTPN20</a>  | <a href="#">10q11.21-q11.22</a> | N.A.                   | N.A.                  | <a href="#">Map</a> | <a href="#">Map</a> | <a href="#">Map</a> | -                          | -                   |   |  |
| hPTPepsilon | <a href="#">PTPRE</a>   | <a href="#">10q26.2</a>         | <a href="#">600926</a> | <a href="#">5791</a>  | <a href="#">Map</a> | <a href="#">Map</a> | <a href="#">Map</a> | -                          | -                   |   |  |
| hDEP1       | <a href="#">PTPRJ</a>   | <a href="#">11p11.2</a>         | <a href="#">600925</a> | <a href="#">5795</a>  | <a href="#">Map</a> | <a href="#">Map</a> | <a href="#">Map</a> | <a href="#">Yes</a>        | -                   | Colon cancer somatic mutations, Susceptibility to colon cancer-1          | <a href="#">Ruivenkamp et al, Watanabe et al</a>   |
| hSTEP       | <a href="#">PTPN5</a>   | <a href="#">11p15.1</a>         | <a href="#">176879</a> | <a href="#">5776</a>  | <a href="#">Map</a> | <a href="#">Map</a> | <a href="#">Map</a> | -                          | -                   |   |  |
| hSHP1       | <a href="#">PTPN6</a>   | <a href="#">12p13.31</a>        | <a href="#">176883</a> | <a href="#">5777</a>  | <a href="#">Map</a> | <a href="#">Map</a> | <a href="#">Map</a> | <a href="#">Yes</a>        | -                   | Sezary syndrome. Leukemogenesis.Experimental autoimmune enceph            | <a href="#">Beghini et al, Leon et al, Deng et al, Tidow et al, Oka T</a>                      |
| hGLEPP1     | <a href="#">PTPRO</a>   | <a href="#">12p12.3</a>         | <a href="#">600579</a> | <a href="#">5800</a>  | <a href="#">Map</a> | <a href="#">Map</a> | <a href="#">Map</a> | <a href="#">Yes</a>        | -                   |   |  |
| hPCPTP1     | <a href="#">PTPRR</a>   | <a href="#">12q15</a>           | <a href="#">602853</a> | <a href="#">5801</a>  | <a href="#">Map</a> | <a href="#">Map</a> | <a href="#">Map</a> | -                          | -                   | Diabetes ?  | <a href="#">Bektas et al</a>   |
| hPTPbeta    | <a href="#">PTPRB</a>   | <a href="#">12q15</a>           | <a href="#">176882</a> | <a href="#">5787</a>  | <a href="#">Map</a> | <a href="#">Map</a> | <a href="#">Map</a> | -                          | -                   |   |  |
| hPTPS31     | <a href="#">PTPGMC1</a> | <a href="#">12q21.31</a>        | <a href="#">603317</a> | <a href="#">8680</a>  | <a href="#">Map</a> | -                   | <a href="#">Map</a> | -                          | -                   |   |  |
| hSHP2       | <a href="#">PTPN11</a>  | <a href="#">12q24.13</a>        | <a href="#">176876</a> | <a href="#">5781</a>  | <a href="#">Map</a> | <a href="#">Map</a> | <a href="#">Map</a> | -                          | -                   | Noonan syndrome 1, Cardiofaciocutaneous syndrome, AML                     | <a href="#">Tartaglia et al, Kavamura et al</a>  |
| hPTPD1      | <a href="#">PTPN21</a>  | <a href="#">14q31.3-q32.11</a>  | <a href="#">603271</a> | <a href="#">11099</a> | <a href="#">Map</a> | <a href="#">Map</a> | <a href="#">Map</a> | <a href="#">Yes</a>        | <a href="#">Yes</a> |   |  |
| hMEG2       | <a href="#">PTPN9</a>   | <a href="#">15q24.2</a>         | <a href="#">600768</a> | <a href="#">5780</a>  | <a href="#">Map</a> | <a href="#">Map</a> | <a href="#">Map</a> | -                          | -                   |   |  |
| hPTPmu      | <a href="#">PTPRM</a>   | <a href="#">18p11.23</a>        | <a href="#">176888</a> | <a href="#">5797</a>  | <a href="#">Map</a> | <a href="#">Map</a> | <a href="#">Map</a> | -                          | -                   |   |  |
| hTCPTP      | <a href="#">PTPN2</a>   | <a href="#">18p11.21</a>        | <a href="#">176887</a> | <a href="#">5771</a>  | <a href="#">Map</a> | <a href="#">Map</a> | <a href="#">Map</a> | -                          | -                   |   |  |
| hPTPsigma   | <a href="#">PTPRS</a>   | <a href="#">19p13.3</a>         | <a href="#">601576</a> | <a href="#">5802</a>  | <a href="#">Map</a> | <a href="#">Map</a> | <a href="#">Map</a> | <a href="#">Yes</a>        | -                   |   |  |
| hSAP1       | <a href="#">PTPRH</a>   | <a href="#">19q13.42</a>        | <a href="#">602510</a> | <a href="#">5794</a>  | <a href="#">Map</a> | <a href="#">Map</a> | <a href="#">Map</a> | -                          | -                   | Overexpressed in colorectal cancer. Not a Peutz-Jeghers synd. candida     | <a href="#">Seo et al, Marmaros et al</a>  |
| hPTPalpha   | <a href="#">PTPRA</a>   | <a href="#">20p13</a>           | <a href="#">176884</a> | <a href="#">5786</a>  | <a href="#">Map</a> | <a href="#">Map</a> | <a href="#">Map</a> | -                          | -                   |   |  |
| hPTPrho     | <a href="#">PTPRT</a>   | <a href="#">20q12-q13.11</a>    | N.A.                   | <a href="#">11122</a> | <a href="#">Map</a> | <a href="#">Map</a> | <a href="#">Map</a> | <a href="#">Yes</a>        | -                   | Myeloproliferative disorders  |  |
| hPTP1B      | <a href="#">PTPN1</a>   | <a href="#">20q13.13</a>        | <a href="#">176885</a> | <a href="#">5770</a>  | <a href="#">Map</a> | <a href="#">Map</a> | <a href="#">Map</a> | -                          | -                   | Insulin resistance, Obesity QTL, Breast Carcinomas, Ovarian cancer        | <a href="#">Echwald, Dipaola, Gu, Lembertas, Lee, Hunt, Zoderivan, Tanner, Kon</a>             |

Table S5 (Supplement to Table 4 in manuscript)

### Disease markers in diabetes in relation to PTP loci - Hyperlinked references

| Chromosome     | Reference                        | Population                  | Method                  | Confirmed in Population                                 | References (PubMed)  |
|----------------|----------------------------------|-----------------------------|-------------------------|---|--|
| 1p36.3-1p36.23 | <a href="#">Lou et al.</a>       | Northern China Han Families | ASP                     | Extended sample of Northern China Han families          | <a href="#">Du et al.</a>  |
| 1q24-25        | <a href="#">Hanson et al.</a>    | Utah Caucasians             | ASP                     | French and UK Caucasians, Amish                         | <a href="#">Wiltshire et al.</a> , <a href="#">Vionnet et al.</a> , <a href="#">Elbein et al.</a>                            |
| 2q37.3         | <a href="#">Hanis et al.</a>     | Mexican Americans           | ASP                     | French and UK Caucasians                                | <a href="#">Elbein et al.</a> , <a href="#">Hani et al.</a>  |
| 3q27-qter      | <a href="#">Vionnet et al.</a>   | French Caucasians           |                         | Native Americans  | <a href="#">Hegele et al.</a>  |
| 5q13           | <a href="#">Wiltshire et al.</a> | UK Caucasians               | ASP                     | French Caucasians, Native Americans                     | <a href="#">Wiltshire et al.</a>   |
| 8p21-22        | <a href="#">Wiltshire et al.</a> | UK Caucasians               | ASP                     |   |  |
| 9p13-q21       | <a href="#">Duggirala et al.</a> | Mexican Americans           | ASP                     | Finnish Caucasians, American Caucasians                 | <a href="#">Lindgren et al.</a> , <a href="#">Ehm et al.</a>   |
| 10q23.3        | <a href="#">Duggirala et al.</a> | Mexican Americans           | QTL (age at onset)      | Finnish and UK Caucasians,                              | <a href="#">Wiltshire et al.</a> , <a href="#">Vionnet et al.</a> , <a href="#">Ghosh et al.</a>                             |
| 11q23-24       | <a href="#">Hanson et al.</a>    | Pima Indians                | ASP                     | UK Caucasians   | <a href="#">Elbein et al.</a>  |
| 12q24          | <a href="#">Mahtani et al.</a>   | Finnish Caucasians          | QTL (low insulin level) | African Americans, American & Swedish Caucasians        | <a href="#">Ehm et al.</a> , <a href="#">Bowden et al.</a> , <a href="#">Lindgren et al.</a>                                 |
| 20q13.1-q13.2  | <a href="#">Ghosh et al.</a>     | Finnish Caucasians          | ASP                     | French & Americans Caucasians, Ashkenazi Jews, Japanese | <a href="#">Permutt et al.</a> , <a href="#">Bowden et al.</a> , <a href="#">Mori et al.</a> , <a href="#">Zouali et al.</a> |

QTL: Quantitative Trait Locus

ASP: Affected Sibling Pair