**Supplementary Table 1. Lectin used in this study.**

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| **Abbr.** | **Ref.** | **Specificity** | **Specificity-Cartoon** | **Source** | **Fullname/Source species** |
| AAL | 1 | Fuca1-2,3,4 | carbSynthe_0819_D000 | 2 |  Aurentia lectin |
| ABA | 1 | Galb1-3GalNAc | carbSynthe_0627_D000 | 4 |  Agaricus bisporus Lectin (Mushroom)  |
| ACL ,ACA | 2 | Galb1-3GalNAc |  | 4 |  Amaranthus caudatus Lectin (Amaranthin)  |
| AMA | 4 | Mana |  | 4 |  Arum maculatum Lectin (Lords and Ladies)  |
| ASA | 1 | Mana1-3 | carbSynthe_0703_D000 | 4 |  Allium sativum Lectin (Garlic) |
| BBC | 4 | GalNAca, GalNAcb |  | 4 |  Phaseolus vulgaris sp. Lectin (Black Bean) crude |
| BPL | 5 | Galb1-3GalNAc, not to terminal α-GalNAc |  | 3 |  [Bauhinia Purpurea Lectin](http://www.vectorlabs.com/products.details.asp?prodID=163) |
| CALSEPA | 5 | Man, Glc, Glca1-4Glc |  | 4 |  Calystega sepiem Lectin (Hedge Bindweed Rhizomes)  |
| Con A  | 1 | Man (Terminal, Branched), GlcNAc (Terminal) |  | 1 |  Canavalia ensiformis, jack bean |
| CSA | 1 | GalNAca (Terminal) |  | 4 |  Cytisus sessilifolius Lectin (Portugal Broom) |
| DBA | 2 | GalNAca1-3GalNAc, GalNAca1-3Gal |  | 4 |  Dolichos biflorus Lectin (Horse Gram) |
| DSL | 5 | GlcNAc |  | 3 |  [Datura Stramonium Lectin](http://www.vectorlabs.com/products.details.asp?prodID=181) |
| ECL | 1 | Galb1-4GlcNAc (Terminal) |  | 4 |  Erythrina cristagalli Lectin (Coral Tree) |
| EEL | 1 | GalNAcb | carbSynthe_0781_D000 | 4 |  Euonymus europaeus Lectin (Spindle Tree) |
| GHA | 1 | Gala, GalNAca |  | 4 |  Glechoma hederacea Lectin (ground ivy) |
| GNL | 1 | Mana (Terminal) |  | 2 |  Galanthus nivalis agglutinin (snowdrop) |
| GSL-IA4 | 5 | GalNAca |  | 2 |  Griffonia simplicifolia agglutinin |
| GSL-IB4,BSLI-B4 | 2 | Gala (Terminal) |  | 1 |  Griffonia simplicifolia agglutinin |
| GSL-IIBSL-II | 3 | GlcNAca, GlcNAcb |  | 1 |  Griffonia simplicifolia lectin |
| HHL AL | 1 | Mana (Terminal) |  | 4 |  Hippeastrum hybrid Lectin (Amaryllis bulbs)  |
| HMA | 4 | GalNAca, Fuca, Neu5Ac | carbSynthe_0819_D000 | 4 |  Homarus americanus Lectin (Lobster) |
| HPA | 2 | GalNAca (Terminal) |  | 1 |  Helix pomatia agglutinin (Roman snail, edible snail) |
| IAA | 5 | GalNAc |  | 4 |  Iberis amara Lectin |
| IRA | 4 | GalNAca, GalNAcb |  | 4 |  lris hybrid Lectin (Dutch Iris) |
| Jacalin,AIA | 1 | Gala, Galb, GalNAca (O-linkage) |  | 1 |  [Jackfruit lectin (Artocarpus heterophyllus) (bread fruit tree)](http://bj.portlandpress.co.uk/bj/367/0817/bj3670817.htm) |
| LAL | 5 | Fuc? | carbSynthe_0819_D000 | 4 |  Laburnum anagyroides Lectin (Gold Chain)  |
| LCA | 5 | Man |  | 3 |  [Lens Culinaris Agglutinin](http://www.vectorlabs.com/products.details.asp?prodID=230) |
| LEL (TL) | 5 | GlcNAc (prefer trimer and tetramer) |  | 3 |  [Lycopersicon Esculentum (Tomato) Lectin](http://www.vectorlabs.com/products.details.asp?prodID=242)  |
| LTL | 1 | Fuca1-2,3,4 | carbSynthe_0819_D000 | 4 |  Lotus tetragonolobus Lectin (Asparagus Pea) |
| MAA | 2 | Neu5Aca2-3Gal |  | 4 |  Maackia amurensis Lectin  |
| MAL-I | 5 | Galb1-4GlcNAc |  | 3 |  [Maackia Amurensis Lectin I](http://www.vectorlabs.com/products.details.asp?prodID=246)  |
| MAL-II | 5 | Neu5Aca2-3 |  | 3 |  [Maackia Amurensis Lectin II](http://www.vectorlabs.com/products.details.asp?prodID=249)  |
| MNA-G | 4 | Gala, Galb |  | 4 |  Morniga G Lectin (black elderberry) |
| MNA-M | 4 | Mana |  | 4 |  Morniga M Lectin (black elderberry)  |
| MPL | 1 | Gala, GalNAca |  | 4 |  Maclura pomifera Lectin (Osage Orange)  |
| NPL NPA | 4 | Mana? Manb? |  | 4 |  Narcissus pseudo-narcissus Lectin (Daffodil) |
| PSA | 4 | Mana, Glca, GlcNAca |  | 4 |  Pisum sativum Lectin (Garden Pea) |
| PHA-E | 2 | Galb1-4GlcNAcb1-2(Galb1-4GlcNAcb1-6)Man |  | 4 |  Phaseolus vulgaris Lectin (Red Kidney Bean) |
| PHA-L | 2 | Galb1-4GlcNAcb1-2Man |  | 1 |  Phaseolus vulgaris Lectin (Red Kidney Bean)  |
| PNA | 1 | Galb (Terminal) |  | 4 |  Arachis hypogaea lectin from peanut |
| PTL IWBA I, Gal | 5 | Gal |  | 4 |  Psophocarpus tetragonolobus Lectin (Winged Bean)  |
| PTL IWBAI ,GalNAc | 5 | GalNAc |  | 4 |  Psophocarpus tetragonolobus Lectin (Winged Bean)  |
| PWM (PWA) | 5 | GlcNAcb1-4GlcNAc |  | 4 |  Phytolacca americana Lectin (Pokeweed)  |
| RCA-IRCA120 | 5 | Galb |  | 4 |  Ricinus communis Lectin (Castor Bean) |
| SBA | 2 | GalNAca (Terminal), Neu5Aca2-6GalNAc (Tn antigen) |  | 1 |  Soybean agglutinin (*Glycine max,* soya bean) |
| SNAEBL | 2 | Neu5Aca2-6Gal, Neu5Aca2-6GalNAc |  | 2 |  Sambucus nigra (Elderberry Bark) |
| SNA-I | 1 | Neu5Aca2-6Galb1-4GlcNAc, Neu5Aca2-6Galb1-4Glc |  | 4 |  Sambucus nigra (Elderberry Bark) |
| SSA | 5 | GalNAc, Terminal, O-link |  | 4 |  Salvia sclarea  |
| STL (PL) | 5 | GlcNAc, Neu5Ac |  | 3 |  [Solanum Tuberosum (Potato) Lectin](http://www.vectorlabs.com/products.details.asp?prodID=306) |
| TL | 4 | α−GalNAc,β−GalNAc, GalNAc, Gal, Fucose | carbSynthe_0819_D000 | 4 |  Tulipa sp. Lectin (Tulip)  |
| UDA | 1 | GalNAcb |  | 4 |  Urtica dioica Lectin (Stinging Nettle)  |
| UEA-I | 3 | Fuca | carbSynthe_0819_D000 | 4 |  Ulex europaeus Lectin (Gorse, Furze) |
| VFA | 1 | Mana |  | 4 |  Vicia fava Lectin (Fava Bean)  |
| VVLVVA | 4 | GalNAca, GalNAca1-3Gal |  | 4 |  Vicia villosa Lectin (Hairy Vetch) |
| VVA ,Man | 5 | Man |  | 4 |  Vicia villosa Lectin (Hairy Vetch, Mannose Specific) |
| WFA,WFL | 4 | GalNAca, GalNAcb |  | 4 |  Wisteria floribunda Lectin (Japanese Wisteria) |
| WGA | 1 | GlcNAcb |  | 1 |  Triticum vulgaris lectin from wheat germ |

The lectin carbohydrate specificities were summarized from 5 different references: 1, The database of CFG; 2, Hsu et. al. A lectin microarray approach for the rapid analysis of bacterial glycans. Nat Protocols. 2006;1:543–9.; 3, Wearne et. al. Use of lectins for probing differentiated human embryonic stem cells for carbohydrates. Glycobiology. 2006; 16:981–990.; 4, The lectin carbohydrate specificity chart from EY lab; 5, Manual associated with the purchased lectin from EY or Vector. The lectins used in this study were obtained from 4 different sources: 1, Molecular Probes Inc.; 2, Irwin J. Goldstein's group; 3, Vector laboratories Inc.; 4, EY Laboratories Inc.