**S3 Table: Validated Primary antibodies.**

Authentication methods used: 1: Antibody identification at http://antibodyregistry.org; 2: Genetic validation method; 3: Comparison with known published patterns in the literature; 4: Co-labeling of tagged protein with endogenous protein.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Antigen | Source | Host | Catalog #(clone) | Dilution Used | Application | Authentication | Antibody ID | References (PMID) |
| Ap2alphaTfap2a | DSHB | Mouse clone 3B5 | 3B5 | 1:50 conc sup | IF | 1,2,3 | AB\_528084 | >10 |
| Atoh7 | Novus | Rabbit | NBP1-88639Lot R12065 | 1:500 | IF | 1 2 3 4 | AB\_11034390 | 29225067 |
| RFP-Biotin | Abcam | Rabbit | AB34771 | 1:1000 | IF | 1 3 | AB\_777699 | 265878072864111028817801 |
| Crx | Sigma/Prestige | Rabbit | HPA036762Lot # R34426 | 1:1000 | IF | 1 2 3 4 | AB\_10673663 | 31949107 |
| Cdkn1b\* (p27) | BD/Invitrogen | Mouse | clone 57 | 1:100 | IF | 1 2 3 | AB\_1075241 | 16690048 |
| Cyclin D1(Ccnd1) | Neomarkers /Lab Vision | Rabbit | RM-9104-S1Clone: SP4 | 1:100 | IF | 1 3 | AB\_149913 | 15166673 |
| Cyclin D2(Ccnd2) | Santa Cruz | Rat | SC-452Clone 34B1-3 | 1:200 | IF | 1 2 3 | AB\_627350 | 2795753029533784 |
| Arr3cone Arrestin | EMD Millipore | Rabbit | AB15282 | 1:700 | IF | 1 3 | AB\_11210270 | 264535502579861624651551 |
| cPARP(Mus-specific) | Cell Signaling | Rabbit | 9544 | 1:500 | IF | 1 3 | AB\_2160724 | 273533603058108031000436 |
| Endomucin | Santa Cruz | Rat | sc-65495 | 1:50 | IF | 1 3 | AB\_2100037 | >10 |
| Foxg1 | Abcam | Rabbit | AB196868 | 1:1000 | IF | 1 3 | AB\_2892604 | 32024767 |
| GFP | Aves | Chicken | GFP-1020 | 1:3000 | IF | 1 3 | AB100000240 | >100 inRegistry |
| Glutamine Synthetase | EMD Millipore | Mouse | MAB302(Clone GS-6) | 1:1000 | IF | 1 3 | AB\_309678 | 262839252652715325907681 |
| Hes1 | Cell Signaling | Rabbit | 11988D6P2U | 1:500 | IF | 1 2 3 4 | AB\_2728766 | 2968145430059908 |
| Hes1 | Brown lab | Rabbit | N/A | 1:500 | IF | 2 3 4 | No data | 30059908286756622510065619828801 |
| Jagged1\* (C20) | Santa Cruz | Goat | SC-6011 | 1:500 | IF | 1 2 3 4 | AB\_649689 | 1938937030890522 |
| Lhx2 | GENETEX | Rabbit | GTX129241 | 1:500 | IF | 1 3 | AB\_2783558 | 31135891 |
| Mitf | ThermoFisher | Mouse IgG1 | MS-771-P1 | 1:100 | IF | 1 3 | AB\_141542 | 3194910733428890 |
| Nr2e3 | R&D Systems  | Mouse IgG2a | PP-H7223-00(Clone #H7223) | 1:200 | IF | 1 3 | AB\_1964331 | 2923347732023475 |
| Opn1mw | Cheryl Craft | Rabbit | N/A | 1:1000 | IF | 1 3 | No data | 12853434 |
| Opn1sw | Cheryl Craft | Rabbit | N/A | 1:1000 | IF | 1 3 | No data | 12853434 |
| Otx2-Biotin | R&D Systems | Goat | BAF1979 | 1:1000 | IF | 1 3 | AB\_2157171 | 2808990930048641 |
| Pou4f/Brn3 \* | Santa Cruz | Goat | SC 6026 | 1:50 | IF | 1 3 | AB\_673441 | 186269432124654621452196+ 12 more |
| Pax2 | BiolegendCovance | Rabbit | 901001PRB-276P | 1:1000 | IF | 1 2 3 | AB\_2565001AB\_291611 | 2043750207376022473823065975 |
|  |  |  |  |  |  |  |  |  |
| Pax6 | BiolegendCovance | Rabbit | 901301PRB-278P | 1:1000 | IF | 1 2 3 4 | AB\_2565003AB\_291612 | 28132835+ 24 more>40 in Registry |
| Pax6 | Santa Cruz | Mouse (IgG1) | SC-32766(clone AD2.38) | 1:50 | IF | 1 2 3 | AB\_628107 | 25100656 |
| Phospho Histone H3 | EMD Millipore | Rabbit | 06-570Lot# DAM 1416518 | 1:500 | IF | 1 3 | AB\_310177 | 17447250 18205207 18273885>70 in registry |
| Prdm1/Blimp1 | Santa Cruz | Rat | sc-47732(clone 6D3) | 1:100 | IF | 1,2,3 | AB\_628168 | 301845023946301230850343 |
| Prox1 | Chemicon/Millipore | Rabbit | AB 5475 | 1:2000 | IF | 1,2,3 | AB\_177485 | 17183554+10 others |
| Ptf1a | Chris Wright | Rabbit | N/A | 1:2000 | IF  | 1,2,3 | No data | 17075007 |
| Rax | TaKaRa | Rabbit | M228 | 1:1000 | IF | 3 | No data | 291175931949107 |
| Rbpj | Cosmo Bio Japan | Rat | SIM-2ZRBP1Clone T6709 | 1:100 | IF | 1 2 3 | No data | 222751272997707930059908 |
| Rbpms | PhosphoSolutionsEMD Millipore | Guinea Pig | 1832-RPBMSABN1376 | 1:500 | IF | 1 3 | AB\_2492226AB\_2687403 | 25631988 27391320 +10 others |
| Rho | EMD Millipore | Mouseclone 1D4 | MAB5356 | 1:1000 | IF | 1 3 | AB\_11215453 | 30401922 |
| Rlbp1CRALBP | ThermoFisher | Mouseclone B2 | MA1-813 | 1:100 | IF | 1 3 | AB\_2178528 | 1183954011909957+18 others |
| Rxrg\* | Santa Cruz | Rabbit | SC-774 | 1:200 | IF | 1 3 | AB\_2270041 | 3933262930943581 |
| Six3 | Rockland | Rabbit | 600-401-A26 | 1:500 | IF | 1 2 3 4 | AB\_11180063 | 30485816 |
| Sox2 | Millipore | Rabbit | AB5603Lot # LV1395178 | 1:400 | IF | 1 2 3 | AB\_2286686 | 16680766>40 in registry |
| Sox9 | Millipore | Rabbit | AB5535 | 1:200 | IF | 1 3 | AB2239761 | 18626943+ 33 more |
| Thrb2 | Douglas Forrest NIH | Rabbit | N/A | 1:3000 | IF | 2 3 | No data | 19282790 |
| Tubb3 | BiolegendCovance | Rabbit | 802001PRB-435P | 1:1000 | IF | 1 3 | AB\_2564645AB\_291637 | 2924781716874803+ others |
| Tubb3 | BiolegendCovance | Mouse(IgG2A) | 801213MMS-435P | 1:1000 | IF | 1 3 | AB\_2564645AB\_291637 | 3069569731209173+ others |
| Vsx2/Chx10 | Exalpha | Sheep | X1180PN-terminus | 1:500 | IF | 1 3 | AB\_2314191 | 1982716327565351 |
| Vsx2/Chx10 | Sigma/Prestige | Rabbit | HPA003436 | 1:500 | IF | 1 3 | AB\_1078523 | none |
| ZO1 | Millipore | Rat | MABT11Clone R40.76 | 1:500 | IF | 1 3 | AB\_10616098 | 25078648,23897660,23991284 |
|  |  |  |  |  |  |  |  |  |

\*: Discontinued; IF = Immunofluorescence; N/A = not applicable