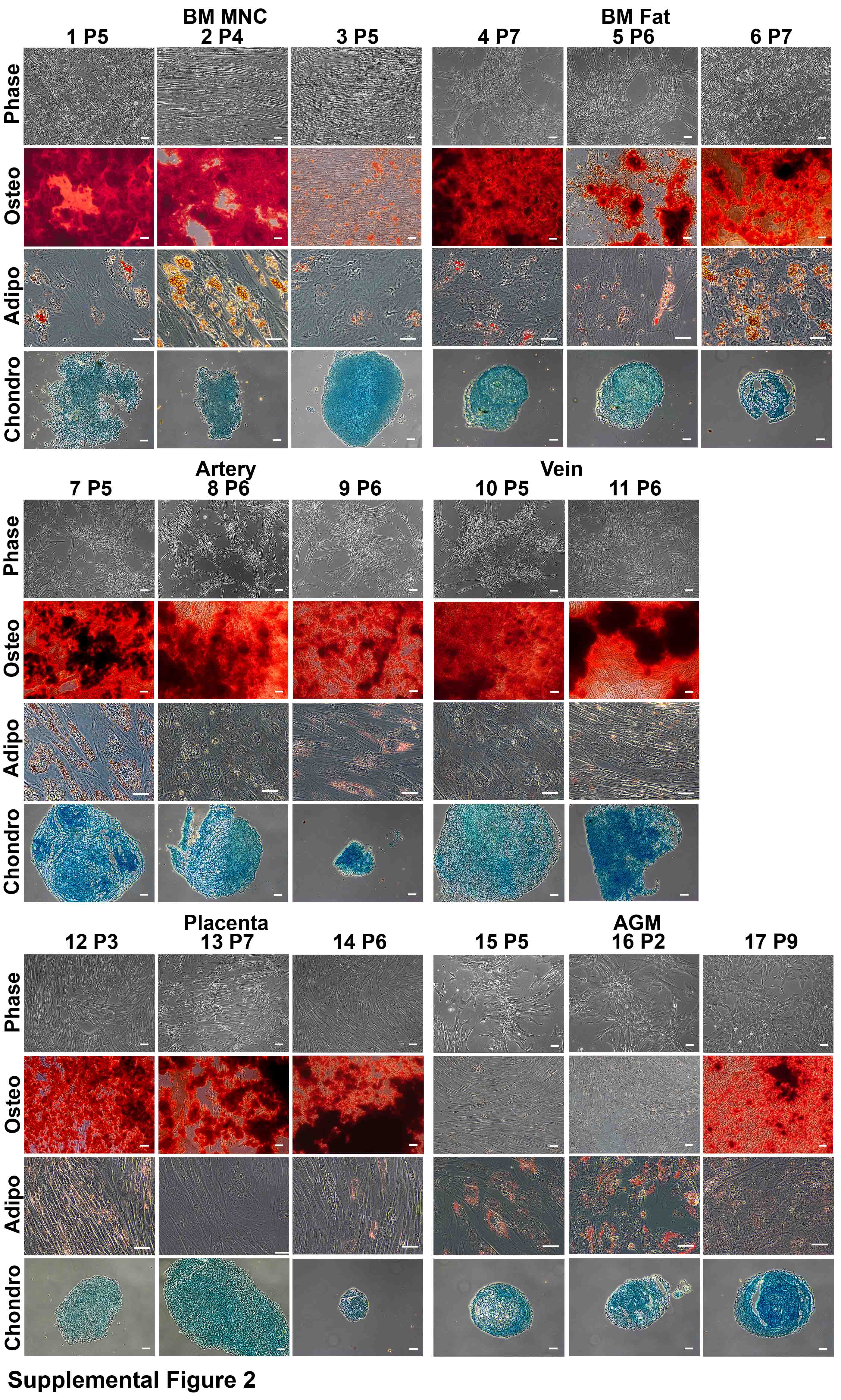


**Supplemental Figure 1: Cell surface phenotype of human mesenchymal stromal cells**

Open histograms reflect the intensity of isotype controls, black histograms the intensity of given cell surface antigens. Numbers indicate the mean fluorescence intensity (MFI) of the antibody staining.



**Supplemental Figure 2: Functional characterisation of human mesenchymal stromal cells**

Confimation of tri-lineage differentiation potential into Osteocytes (Osteo), Adipocytes (Adipo) and Chondrocytes (Chondro). (Scale-bar: 50µm)

**Supplemental Tables:**

**Supplemental Table 1**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **[fold-expansion]** | **CD45+** | **CD34+** | **CD133+CD34+** | **CD133lowCD34+** |
| **Sus** | 280.4 ± 72.5 | 23.0 ± 6.4 | 16.5 ± 4.7 | 6.5 ± 2.0 |
| **AFT024** | 1376.3 ± 487.7 | 403.5 ± 185.7 | 146.4 ± 69.2 | 257.1 ± 116.6 |
| **OP9** | 966.9 ± 593.9 | 369.7 ± 176.5 | 135.9 ± 55.0 | 233.7 ± 121.5 |
| **MS-5** | 1054.0 ± 308.4 | 249.2 ± 85.3 | 61.7 ± 18.6 | 187.5 ± 68.2 |

Fold-expansion of CD45+, CD34+, CD133+CD34+ and CD133lowCD34+ populations in suspension (w/o stromal cells) and in co-culture with murine stromal cell line cells. Mean ± SEM; n=3 for all values

**Supplemental Table 2**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **[fold-expansion]** | **LTC-IC** | **NK-IC** | **CFC 133+** | **CFC 133low** |
| **Sus** | 0.78 ± 0.36 | 0.56 ± 0.38 | 1.76 ± 0.34 | 0.52 ± 0.38 |
| **AFT024** | 3.26 ± 1.77 | 13.86 ± 6.26 | 6.53 ± 1.72 | 47.88 ± 10.77 |
| **OP9** | 4.68 ± 2.26 | 14.46 ± 6.91 | 27.91 ± 3.07 | 25.70 ± 4.97 |
| **MS-5** | 2.01 ± 0.99 | 4.51 ± 2.53 | 18.31 ± 6.65 | 26.10 ± 1.67 |

Fold-expansion of progenitor cells with LTC-IC, NK-IC and CFC potential after culture in suspension (w/o stromal cells) and in co-culture with murine stromal cell line cells. Mean ± SEM; n=3 for all values

**Supplemental Table 3**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Antigen** | **Flurochrome** | **Company** | **Clone** | **Cells** |
| CD14 | PE | BD Heidelberg, Germany | M5E2 | M |
| CD31 | PE | BD Heidelberg, Germany | WM59 | M |
| CD34 | ECD | Beckman Coulter, Krefeld, Germany | 581 | H |
| CD38 | FITC | BD Heidelberg, Germany | HIT2 | H |
| CD45 | PE-Cy7 | Beckman Coulter, Krefeld, Germany | J33 | H |
| CD45 | APC | Beckman Coulter, Krefeld, Germany | J33 | M |
| CD73 | PE | BD Heidelberg, Germany | AD2 | M |
| CD90 | FITC | Beckman Coulter, Krefeld, Germany | 2G5 | M |
| CD105 | FITC | Ancell, Bayport, USA | SN6/N1-3A1 | M |
| CD133 | PE | Miltenyi Biotech, Bergisch Gladbach, Germany | AC133 | H |
| CD146 | PE | Beckman Coulter, Krefeld, Germany | TEA1134 | M |

**Abbreviations**: H = hematopoietic cells; M = mesenchymal cells; FITC = Fluorescein Isothiocyanate; PE = Phycoerythrine; PE-Cy7 = PE-Cyanine 7; APC = Allophycocyanin; ECD = Electron-coupled Dye.

**Supplemental Table 4**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **[fold-expansion]** | **CD45+** | **CD34+** | **CD133+CD34+** | **CD133lowCD34+** |
| **Sus** | 179 ± 37 | 6.8 ± 1.4 | 4.1 ± 1.1 | 3.3 ± 0.6 |
| **AFT024** | 2226 ± 532 | 829.3 ± 284.4 | 253.8 ± 89.0 | 664.7 ± 255.1 |
| **BM MNC 1** | 1904 ± 289 | 192.5 ± 33.2 | 132.2 ± 38.5 | 61.2 ± 12.0 |
| **BM MNC 2** | 2777 ± 306 | 447.8 ± 104.1 | 292.7 ± 94.3 | 178.4 ± 35.8 |
| **BM MNC 3** | 1556 ± 229 | 189.1 ± 38.1 | 128.3 ± 27.1 | 65.0 ± 10.8 |
| **BM Fat 4** | 1139 ± 127 | 146.7 ± 31.5 | 108.0 ± 30.3 | 45.4 ± 8.9 |
| **BM Fat 5** | 1411 ± 320 | 194.0 ± 41.1 | 166.8 ± 43.8 | 51.4 ± 13.8 |
| **BM Fat 6** | 2649 ± 363 | 289.7 ± 87.1 | 217.5 ± 78.6 | 97.8 ± 29.1 |
| **Vein 7** | 1479 ± 130 | 92.4 ± 23.6 | 52.7 ± 15.8 | 38.3 ± 16.1 |
| **Vein 8** | 1797 ± 176 | 99.6 ± 17.2 | 71.0 ± 17.5 | 30.9 ± 9.9 |
| **Artery 9** | 1501 ± 141 | 108.5 ± 21.1 | 85.7 ± 21.3 | 25.4 ± 4.9 |
| **Artery 10** | 1724 ± 804 | 76.6 ± 27.2 | 45.8 ± 16.4 | 40.7 ± 24.1 |
| **Artery 11** | 1592 ± 205 | 105.1 ± 19.6 | 76.7 ± 19.7 | 40.4 ± 6.4 |
| **Placenta 12** | 1098 ± 300 | 38.5 ± 11.2 | 13.9 ± 6.3 | 24.6 ± 7.1 |
| **Placenta 13** | 721 ± 147 | 28.1 ± 8.9 | 18.7 ± 5.8 | 9.4 ± 4.3 |
| **Placenta 14** | 1352 ± 309 | 37.1 ± 6.8 | 9.4 ± 2.2 | 27.8 ± 5.9 |
| **AGM 15** | 324 ± 56 | 19.6 ± 3.5 | 10.7 ± 2.9 | 8.8 ± 1.3 |
| **AGM 16** | 358 ± 58 | 16.9 ± 2.9 | 9.9 ± 1.8 | 6.9 ± 1.8 |
| **AGM 17** | 304 ± 54 | 15.2 ± 3.3 | 10.5 ± 2.6 | 4.6 ± 1.3 |

Fold-expansion of CD45+, CD34+, CD133+CD34+ and CD133lowCD34+ populations in suspension culture (w/o stromal cells) and in co-culture with AFT024 or primary human mesenchymal stromal cells. Mean ± SEM; n=5 for all values

**Supplemental Table 5**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **[fold-expansion]** | **LTC-IC** | **NK-IC** | **CFC 133+** | **CFC 133low** |
| **Sus** | 1.4 ± 0.6 | 0.2 ± 0.1 | 3.3 ± 1.2 | 0.5 ± 0.4 |
| **AFT024** | 3.3 ± 1.4 | 9.2 ± 4.7 | 47.5 ± 4.5 | 96.9 ± 22.6 |
| **BM MNC 1** | 10.0 ± 3.8 | 6.0 ± 1.8 | 84.3 ± 24.8 | 9.0 ± 4.2 |
| **BM MNC 2** | 26.9 ± 9.5 | 6.9 ± 1.7 | 239.9 ± 107.1 | 38.5 ± 17.8 |
| **BM MNC 3** | 13.2 ± 4.3 | 5.7 ± 2.8 | 72.6 ± 14.9 | 15.3 ± 7.4 |
| **BM Fat 4** | 13.9 ± 4.4 | 5.9 ± 2.0 | 70.5 ± 19.3 | 16.9 ± 4.2 |
| **BM Fat 5** | 28.9 ± 22.9 | 6.6 ± 3.6 | 72.4 ± 28.3 | 20.6 ± 8.5 |
| **BM Fat 6** | 12.6 ± 7.0 | 5.8 ± 1.9 | 88.1 ± 32.1 | 6.7 ± 5.3 |
| **Vein 7** | 13.0 ± 6.8 | 3.0 ± 1.0 | 32.4 ± 7.8 | 7.9 ± 6.3 |
| **Vein 8** | 11.3 ± 3.7 | 2.3 ± 0.6 | 40.6 ± 7.2 | 5.4 ± 3.0 |
| **Artery 9** | 20.5 ± 6.5 | 4.1 ± 1.5 | 61.4 ± 12.5 | 2.4 ± 1.3 |
| **Artery 10** | 8.6 ± 3.2 | 1.5 ± 1.0 | 38.8 ± 7.1 | 2.7 ± 1.6 |
| **Artery 11** | 12.4 ± 6.2 | 4.0 ± 1.3 | 47.3 ± 9.4 | 6.3 ± 2.9 |
| **Placenta 12** | 1.4 ± 0.6 | 7.1 ± 3.4 | 21.9 ± 8.7 | 2.9 ± 1.8 |
| **Placenta 13** | 0.7 ± 0.3 | 4.6 ± 0.6 | 26.8 ± 8.9 | 2.2 ± 1.5 |
| **Placenta 14** | 1.7 ± 1.1 | 5.6 ± 1.6 | 20.1 ± 9.3 | 4.3 ± 1.6 |
| **AGM 15** | 0.4 ± 0.2 | 2.9 ± 0.8 | 23.1 ± 9.6 | 1.6 ± 0.5 |
| **AGM 16** | 0.3 ± 0.1 | 2.8 ± 0.7 | 16.9 ± 4.3 | 1.8 ± 0.7 |
| **AGM 17** | 1.0 ± 0.5 | 2.0 ± 0.1 | 22.9 ± 8.8 | 2.3 ± 1.0 |

Fold-expansion of progenitor cells with LTC-IC, NK-IC and CFC potential after culture in suspension culture (w/o stromal cells) and in co-culture with AFT024 or primary human mesenchymal stromal cells. Mean ± SEM; n=5 for all values