Bleomycin-induced genome structural variations in normal, non-tumor cells

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**Supplementary Table 1.** Sequencing statistics and number of detected artificial rearrangements in sequencing libraries prepared with different approaches.

|   | Library preparation protocol | Total number of sequencing reads | Total bases | Average read length | Interchromosomal | Intrachromosomal direct | Intrachromosomal inverted | Total |
|---|--------------------------------|---------------------------------|-------------|---------------------|------------------|-------------------------|--------------------------|-------|
| 1 | Ligation                       | 4,870,314                       | 8.82E+08    | 181                 | 168,296          | 20,568                  | 22,528                   | 211,392 |
| 2 | Ligation                       | 4,903,572                       | 8.95E+08    | 182                 | 176,530          | 22,153                  | 24,469                   | 223,152 |
| 3 | Ligation                       | 5,164,676                       | 9.31E+08    | 180                 | 163,912          | 20,885                  | 22,291                   | 207,088 |
| 4 | MuPlus                         | 16,591,299                      | 3.07E+09    | 184                 | 51               | 24                      | 29                       | 104   |
| 5 | MuPlus                         | 12,454,296                      | 2.28E+09    | 183                 | 28               | 21                      | 21                       | 70    |
| 6 | MuPlus                         | 10,848,413                      | 1.99E+09    | 183                 | 30               | 32                      | 28                       | 90    |
| 7 | LCF                            | 3,301,616                       | 6.49E+08    | 196                 | 0                | 0                       | 1                        | 1     |
| 8 | LCF                            | 3,210,002                       | 6.53E+08    | 203                 | 0                | 0                       | 0                        | 0     |
| 9 | LCF                            | 4,586,136                       | 9.19E+08    | 200                 | 0                | 0                       | 0                        | 0     |
| 10| LCF                            | 9,325,107                       | 1.83E+09    | 196                 | 1                | 0                       | 0                        | 1     |
| 11| LCF                            | 9,557,736                       | 1.88E+09    | 196                 | 1                | 0                       | 0                        | 1     |
| 12| LCF                            | 4,801,042                       | 9.61E+08    | 200                 | 0                | 0                       | 0                        | 0     |
| 13| LCF                            | 9,243,208                       | 1.8E+09     | 194                 | 0                | 0                       | 0                        | 0     |
| 14| LCF                            | 6,538,104                       | 1.26E+09    | 193                 | 1                | 0                       | 0                        | 1     |
Supplementary Table 2. Sequencing statistics and number of detected somatic GSVs in human dermal fibroblasts.

| Cell strain | Proliferation status | Treatment | Total number of sequencing reads | Total bases | Average read length | Rearrangements detected | Total |
|-------------|----------------------|-----------|---------------------------------|-------------|--------------------|-------------------------|-------|
|             |                      |           |                                 |             |                    | Interchromosomal         |       |
|             |                      |           |                                 |             |                    | Intrachromosomal direct |       |
|             |                      |           |                                 |             |                    | Intrachromosomal inverted|       |
| HDF         | Dividing             | Control   | 6,147,661                       | 1.21E+09    | 196                | 1                        | 3     | 0     | 4     |
|             |                      | BLM, 24h  | 6,179,847                       | 1.22E+09    | 197                | 4                        | 2     | 0     | 6     |
|             |                      |           | 5,031,399                       | 9.97E+08    | 198                | 2                        | 2     | 1     | 5     |
|             |                      |           | 9,344,154                       | 1.93E+09    | 206                | 8                        | 2     | 0     | 10    |
|             |                      |           | 9,001,915                       | 1.77E+09    | 196                | 8                        | 3     | 1     | 12    |
|             |                      | BLM, 72h  | 4,921,433                       | 9.54E+08    | 193                | 11                       | 4     | 7     | 22    |
|             |                      |           | 5,974,759                       | 1.18E+09    | 198                | 19                       | 4     | 4     | 27    |
|             |                      |           | 8,115,001                       | 1.6E+09     | 197                | 24                       | 11    | 5     | 40    |
|             |                      |           | 4,905,485                       | 1.02E+09    | 207                | 23                       | 3     | 3     | 29    |
|             |                      |           | 5,473,137                       | 1.08E+09    | 197                | 31                       | 3     | 2     | 36    |
|             |                      |           | 6,541,396                       | 1.26E+09    | 192                | 10                       | 1     | 3     | 14    |
|             |                      | BLM, 144h | 5,512,212                       | 1.1E+09     | 199                | 16                       | 1     | 0     | 17    |
|             |                      |           | 22,131,635                      | 4.27E+09    | 193                | 43                       | 21    | 5     | 69    |
|             |                      |           | 4,985,544                       | 9.77E+08    | 195                | 6                        | 7     | 3     | 16    |
|             |                      |           | 7,385,685                       | 1.48E+09    | 199                | 19                       | 4     | 2     | 26    |
|             |                      | BLM, 24h  | 2,858,430                       | 5.49E+08    | 192                | 1                        | 1     | 1     | 3     |
|             |                      |           | 6,502,975                       | 1.3E+09     | 200                | 4                        | 3     | 0     | 7     |
|             |                      |           | 5,668,222                       | 1.11E+09    | 195                | 2                        | 3     | 2     | 7     |
|             |                      |           | 7,262,142                       | 1.45E+09    | 199                | 7                        | 2     | 2     | 11    |
|             |                      |           | 6,313,110                       | 1.27E+09    | 201                | 13                       | 2     | 2     | 17    |
| Quiescent   |                      | Control   | 5,729,781                       | 1.12E+09    | 195                | 14                       | 3     | 0     | 17    |
|             |                      |           | 9,540,064                       | 1.87E+09    | 195                | 24                       | 5     | 2     | 31    |
|             |                      |           | 6,288,108                       | 1.22E+09    | 193                | 21                       | 7     | 3     | 31    |
|             |                      |           | 3,248,430                       | 6.49E+08    | 199                | 12                       | 3     | 2     | 17    |
|             |                      |           | 6,426,921                       | 1.26E+09    | 196                | 25                       | 8     | 1     | 34    |
|             |                      | BLM, 24h  | 7,717,135                       | 1.47E+09    | 190                | 167                      | 22    | 18    | 207   |
|             |                      |           | 5,058,931                       | 1.03E+09    | 202                | 137                      | 11    | 9     | 157   |
|           | Control | IMR90 | Dividing |
|-----------|---------|-------|----------|
|           |         |       |          |
|           |         |       |          |
| BLM, 72h | 6,513,153 | 1.3E+09 | 200 | 175 | 24 | 8 | 207 |
| BLM, 144h | 2,874,352 | 5.65E+08 | 196 | 76 | 14 | 3 | 93 |
|           | 6,017,566 | 1.24E+09 | 205 | 210 | 25 | 8 | 243 |
|           | 6,266,749 | 1.2E+09 | 190 | 111 | 10 | 8 | 129 |
|           | 5,202,098 | 1.09E+09 | 209 | 108 | 15 | 3 | 126 |
|           | 3,260,598 | 6.57E+08 | 201 | 76 | 8 | 0 | 84 |
|           | 4,023,852 | 8.04E+08 | 199 | 89 | 14 | 3 | 108 |
|           | 6,529,173 | 1.3E+09 | 198 | 201 | 19 | 11 | 231 |
|           | 2,906,356 | 5.9E+08 | 203 | 43 | 6 | 4 | 53 |
| BLM, 144h | 7,195,328 | 1.42E+09 | 196 | 113 | 20 | 6 | 139 |
|           | 6,910,988 | 1.34E+09 | 194 | 134 | 18 | 13 | 165 |
|           | 2,777,736 | 5.7E+08 | 205 | 57 | 10 | 8 | 75 |
|           | 9,570,740 | 1.84E+09 | 192 | 229 | 27 | 10 | 266 |
|           | 10,149,497 | 2.1E+09 | 207 | 2 | 6 | 0 | 8 |
|           | 7,506,249 | 1.51E+09 | 200 | 4 | 3 | 0 | 7 |
|           | 6,378,313 | 1.3E+09 | 203 | 2 | 3 | 1 | 6 |
| Control   | 7,285,818 | 1.41E+09 | 193 | 19 | 6 | 0 | 25 |
|           | 6,291,777 | 1.19E+09 | 189 | 17 | 6 | 1 | 24 |
| BLM, 24h  | 6,268,300 | 1.23E+09 | 196 | 17 | 5 | 4 | 26 |
|           | 7,416,915 | 1.44E+09 | 193 | 8 | 4 | 0 | 12 |
|           | 6,327,077 | 1.27E+09 | 200 | 6 | 3 | 3 | 12 |
| BLM, 72h  | 6,733,012 | 1.35E+09 | 200 | 8 | 3 | 5 | 16 |
|           | 6,633,386 | 1.31E+09 | 197 | 4 | 5 | 1 | 10 |
|           | 7,290,640 | 1.45E+09 | 198 | 7 | 4 | 0 | 11 |
| BLM, 144h | 7,124,755 | 1.41E+09 | 198 | 7 | 3 | 1 | 11 |
| Control   | 6,435,414 | 1.26E+09 | 195 | 4 | 1 | 1 | 6 |
|           | 5,858,887 | 1.17E+09 | 199 | 4 | 0 | 2 | 6 |
| Quiescent | 6,641,877 | 1.33E+09 | 200 | 4 | 5 | 1 | 10 |
| BLM, 24h  | 6,134,504 | 1.23E+09 | 199 | 72 | 11 | 1 | 84 |
|           | 6,492,888 | 1.26E+09 | 193 | 133 | 16 | 4 | 153 |
| BLM, 72h  | 6,181,868 | 1.2E+09 | 194 | 44 | 19 | 3 | 66 |
|           | 6,517,560 | 1.27E+09 | 194 | 60 | 18 | 3 | 81 |
| BLM, 144h |      |     |   |   |   |
|-----------|------|-----|---|---|---|
| 6,304,231 | 1.22E+09 | 194 | 66 | 11 | 5 |
| 5,934,413 | 1.14E+09 | 192 | 19 | 3  | 2 |
| 5,889,351 | 1.13E+09 | 192 | 20 | 5  | 0 |
| 6,318,817 | 1.22E+09 | 193 | 18 | 6  | 3 |
**Supplementary Table 3.** Sequencing statistics and number of detected somatic GSVs in mouse tissues.

| Treatment | Tissue | Total number of sequencing reads | Total bases | Average read length | Rearrangements detected |  |
|-----------|--------|---------------------------------|-------------|---------------------|-------------------------|---|
| Control   | Heart  | 6,498,294                       | 1.27E+09    | 195                 | 4                       | 0 | 2 | 6 |
|           | Heart  | 7,626,367                       | 1.5E+09     | 197                 | 6                       | 1 | 1 | 8 |
|           | Heart  | 8,874,074                       | 1.74E+09    | 196                 | 6                       | 1 | 5 | 12|
|           | Liver  | 4,372,769                       | 8.81E+08    | 202                 | 0                       | 0 | 3 | 3 |
|           | Liver  | 8,422,078                       | 1.65E+09    | 196                 | 2                       | 3 | 3 | 8 |
|           | Liver  | 8,362,078                       | 1.67E+09    | 199                 | 6                       | 2 | 1 | 9 |
| BLM       | Heart  | 5,334,878                       | 1.04E+09    | 196                 | 6                       | 0 | 2 | 8 |
|           | Heart  | 7,161,123                       | 1.41E+09    | 196                 | 7                       | 3 | 1 | 11|
|           | Heart  | 5,826,925                       | 1.16E+09    | 199                 | 8                       | 2 | 1 | 11|
|           | Liver  | 6,834,133                       | 1.34E+09    | 196                 | 4                       | 3 | 3 | 10|
|           | Liver  | 7,046,433                       | 1.38E+09    | 195                 | 4                       | 2 | 6 | 12|
|           | Liver  | 8,449,269                       | 1.68E+09    | 199                 | 10                      | 5 | 2 | 17|