GENETICS

3,93 MUTATIONS / MB

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1 MB is 1 Megabyte is 1,000,000 bytes and 1 Mb is 1 Megabase is 1,000,000 nucleotides. Although a new <u>nature paper</u> doesn't make any fuss about it, there are 3,93 mutations / Mb in cancer tissues (in total they found 1,007 mutations by scanning 274 Mb from 210 cancer tissues).

There are some minor inconsistencies as according to the methods they sequenced \sim 500 bp of \sim 10,000 fragments from 210 cancers (which would multiply to 1,050 Mb and not 274 Mb) as well as 1,007 / 274 is 3,68 (and not 3,93).

Anyway, 3,93 / Mb is an excessive high figure. If we multiply 3,93 with the 3,100 Mb of the human genome, each cancer cell will have 12,183 acquired somatic mutations which is about 10-fold to <u>conventional wisdom</u>.

By looking at the ratio of non-synonymous:synonymous base exchanges, the authors believe that 83% are passenger mutations – this would mean that a "normal" cell of a 70 year old would have acquired 10,092 mutations.

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More estimates in a <u>July 2007 review</u>.

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Another update

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