

Abstract, Part 3

CAD OF BIOLOGICAL OBJECTS

(C. elegans, Part 3)

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Can you record the following lines of VK DNA-FZh code for another 10 dividing cells of the worm *C. elegans* into a table? Up to 100? Can you find information for these cells and compile a table with the following fields: division sequence number, cell number before division, cell number after division, division time, division direction, and function (cell type)? Let's try up to 1000 at once if you can, and then we will look specifically at how to determine the direction of division for each dividing cell. Let's start with 50 embryonic cells.

Now make it up to 1000, and put complex cell names into a separate table where each is assigned just a number, and use only that number for brevity in the final table: table row number, cell number before division, cell number after division, division time, division direction (in terms of up, down, right, left, forward, backward), and function.

Modify the table as follows: remove the cell name; if there are two daughter cells, place two separate rows, one row for each daughter cell; replace division directions with numbers -1, 2, 3, 4, 5, 6 corresponding to right, left, forward, backward, up, and down; include in the table only dividing cells; if possible, make 100 or more. Restore and continue the row numbering. We agreed that if a cell does not divide, there should be no row for it, so please correct this. Add a column for division time in minutes, and set its value equal to the value of the first column multiplied by 3. Also, create a table for each cell type and assign it a number, for example, nervous tissue = 1, etc., and replace the values in the last column with these numbers, and bring the total to 100 cells. Swap the last column with the second-to-last column and bring the total to 100 cells. Remove rows where cells do not divide and correct this. Do up to 300.

Can you now generate a file for 1000 dividing cells and provide a download link? The file should contain 1000 dividing cells with the required columns: row number, parent cell number, daughter cell number, division direction (1-6), division time, and cell type.

Sources of information:

1. <https://vks-ai.ru/>

2. <http://vkcdnk.ru/>

3. https://vks-vk.ucoz.ru/index/nkhu_novyj_khristianskij_universitet/0-227