

Cell MCF-7 | 300273

General information

Description

MCF7, human breast carcinoma cell line, estrogen receptor positive, progesterone receptor positive, HER2/neu negative. MCF7 cells are derived from a 69-year-old woman with primary breast cancer. The cells are characterized by their ability to grow in the presence of estrogen and progesterone. MCF7 cells are widely used in breast cancer research, particularly in studies related to hormone therapy and drug resistance. The cell line is maintained in DMEM/F12 medium supplemented with insulin, transferrin, selenium, and prolactin. MCF7 cells are known for their high tumorigenicity and ability to form mammary gland-like structures in vivo. The cell line is also used for studying the effects of various anticancer drugs and for investigating the mechanisms of drug resistance in breast cancer.

Organism Human

Tissue Breast

Disease Breast cancer

Metastatic site Liver, lung, bone, brain

Synonyms MCF 7, MCF.7, MCF7, MCF7-7, ssMCF-7, ssMCF7, MCF7/WT, MCF7-CTRL, IBMF-7

Characteristics

Age 69 years

Gender Female

Ethnicity Caucasian

Morphology Epithelial

Growth properties Adherent, suspension

Documentation

Citation MCF-7 (Cell Culture) Cytion 300273

Biosafety level 1

Product sheet

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NCBI_TaxID 9606

CellosaurusAccession CVCL_0031

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Receptors expressed ERBB2, ERBB3, EGFR, ERBB4, IGF1R, IGF2R, MET, NTRK1, NTRK2, NTRK3, RET, TRKA, TRKB, TRKC, wildtype α -variant, CD44, CD47, CD59, CD133, CD151, CD166, CD244, CD268, CD271, CD274, CD276, CD278, CD281, CD300, CD320, CD326, CD349, CD371, CD375, CD376, CD377, CD378, CD379, CD380, CD381, CD382, CD383, CD384, CD385, CD386, CD387, CD388, CD389, CD390, CD391, CD392, CD393, CD394, CD395, CD396, CD397, CD398, CD399, CD400, CD401, CD402, CD403, CD404, CD405, CD406, CD407, CD408, CD409, CD410, CD411, CD412, CD413, CD414, CD415, CD416, CD417, CD418, CD419, CD420, CD421, CD422, CD423, CD424, CD425, CD426, CD427, CD428, CD429, CD430, CD431, CD432, CD433, CD434, CD435, CD436, CD437, CD438, CD439, CD440, CD441, CD442, CD443, CD444, CD445, CD446, CD447, CD448, CD449, CD450, CD451, CD452, CD453, CD454, CD455, CD456, CD457, CD458, CD459, CD460, CD461, CD462, CD463, CD464, CD465, CD466, CD467, CD468, CD469, CD470, CD471, CD472, CD473, CD474, CD475, CD476, CD477, CD478, CD479, CD480, CD481, CD482, CD483, CD484, CD485, CD486, CD487, CD488, CD489, CD490, CD491, CD492, CD493, CD494, CD495, CD496, CD497, CD498, CD499, CD500, CD501, CD502, CD503, CD504, CD505, CD506, CD507, CD508, CD509, CD510, CD511, CD512, CD513, CD514, CD515, CD516, CD517, CD518, CD519, CD520, CD521, CD522, CD523, CD524, CD525, CD526, CD527, CD528, CD529, CD530, CD531, CD532, CD533, CD534, CD535, CD536, CD537, CD538, CD539, CD540, CD541, CD542, CD543, CD544, CD545, CD546, CD547, CD548, CD549, CD550, CD551, CD552, CD553, CD554, CD555, CD556, CD557, CD558, CD559, CD560, CD561, CD562, CD563, CD564, CD565, CD566, CD567, CD568, CD569, CD570, CD571, CD572, CD573, CD574, CD575, CD576, CD577, CD578, CD579, CD580, CD581, CD582, CD583, CD584, CD585, CD586, CD587, CD588, CD589, CD590, CD591, CD592, CD593, CD594, CD595, CD596, CD597, CD598, CD599, CD600, CD601, CD602, CD603, CD604, CD605, CD606, CD607, CD608, CD609, CD610, CD611, CD612, CD613, CD614, CD615, CD616, CD617, CD618, CD619, CD620, CD621, CD622, CD623, CD624, CD625, CD626, CD627, CD628, CD629, CD630, CD631, CD632, CD633, CD634, CD635, CD636, CD637, CD638, CD639, CD640, CD641, CD642, CD643, CD644, CD645, CD646, CD647, CD648, CD649, CD650, CD651, CD652, CD653, CD654, CD655, CD656, CD657, CD658, CD659, CD660, CD661, CD662, CD663, CD664, CD665, CD666, CD667, CD668, CD669, CD670, CD671, CD672, CD673, CD674, CD675, CD676, CD677, CD678, CD679, CD680, CD681, CD682, CD683, CD684, CD685, CD686, CD687, CD688, CD689, CD690, CD691, CD692, CD693, CD694, CD695, CD696, CD697, CD698, CD699, CD700, CD701, CD702, CD703, CD704, CD705, CD706, CD707, CD708, CD709, CD710, CD711, CD712, CD713, CD714, CD715, CD716, CD717, CD718, CD719, CD720, CD721, CD722, CD723, CD724, CD725, CD726, CD727, CD728, CD729, CD730, CD731, CD732, CD733, CD734, CD735, CD736, CD737, CD738, CD739, CD740, CD741, CD742, CD743, CD744, CD745, CD746, CD747, CD748, CD749, CD750, CD751, CD752, CD753, CD754, CD755, CD756, CD757, CD758, CD759, CD760, CD761, CD762, CD763, CD764, CD765, CD766, CD767, CD768, CD769, CD770, CD771, CD772, CD773, CD774, CD775, CD776, CD777, CD778, CD779, CD780, CD781, CD782, CD783, CD784, CD785, CD786, CD787, CD788, CD789, CD790, CD791, CD792, CD793, CD794, CD795, CD796, CD797, CD798, CD799, CD800, CD801, CD802, CD803, CD804, CD805, CD806, CD807, CD808, CD809, CD810, CD811, CD812, CD813, CD814, CD815, CD816, CD817, CD818, CD819, CD820, CD821, CD822, CD823, CD824, CD825, CD826, CD827, CD828, CD829, CD830, CD831, CD832, CD833, CD834, CD835, CD836, CD837, CD838, CD839, CD840, CD841, CD842, CD843, CD844, CD845, CD846, CD847, CD848, CD849, CD850, CD851, CD852, CD853, CD854, CD855, CD856, CD857, CD858, CD859, CD860, CD861, CD862, CD863, CD864, CD865, CD866, CD867, CD868, CD869, CD870, CD871, CD872, CD873, CD874, CD875, CD876, CD877, CD878, CD879, CD880, CD881, CD882, CD883, CD884, CD885, CD886, CD887, CD888, CD889, CD890, CD891, CD892, CD893, CD894, CD895, CD896, CD897, CD898, CD899, CD900, CD901, CD902, CD903, CD904, CD905, CD906, CD907, CD908, CD909, CD910, CD911, CD912, CD913, CD914, CD915, CD916, CD917, CD918, CD919, CD920, CD921, CD922, CD923, CD924, CD925, CD926, CD927, CD928, CD929, CD930, CD931, CD932, CD933, CD934, CD935, CD936, CD937, CD938, CD939, CD940, CD941, CD942, CD943, CD944, CD945, CD946, CD947, CD948, CD949, CD950, CD951, CD952, CD953, CD954, CD955, CD956, CD957, CD958, CD959, CD960, CD961, CD962, CD963, CD964, CD965, CD966, CD967, CD968, CD969, CD970, CD971, CD972, CD973, CD974, CD975, CD976, CD977, CD978, CD979, CD980, CD981, CD982, CD983, CD984, CD985, CD986, CD987, CD988, CD989, CD990, CD991, CD992, CD993, CD994, CD995, CD996, CD997, CD998, CD999, CD1000.

Protein expression P53, pGP9.5, CEA

Isoenzymes PGM3, 1, PGM1, 1-2, ES-D, 1-2, AK-1, 1, GLO-1, 1-2, G6PD, B,

Oncogenes Wnt7h +, Tx-4

Tumorigenic Yes, in nude mice

Products IGFBP (IGFBP) BP-2, BP-4, BP-5

Mutational profile TP53 wt

Karyotype 46, XX, t(11;22)(p11;p11), der(22)t(11;22)(p11;p11), 2S, 29, 34

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Culture Medium EMEM (MEM Eagle), w: 2 mM L-Glutamine, w: 2.2 g/L NaHCO₃, w: EBSS (Cytion 820100a)

Supplements 10% FBS, 1% NEAA

Dissociation Reagent Trypsin

Doubling time 24 hours

Subculturing 1:3-5 split ratio, T25, 3-5 \times 10⁶ cells, 3 \times 10⁴ cells

Seeding density 3 \times 10⁴ cells

Product sheet

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Fluid renewal 2 x 3 XXXXX XXXXX

Post-Thaw Recovery XXXXX XXXXX XXXXX XXXXX 48 XXXX XXXX XXXXXXX

Freeze medium XXXXXXX XXXXXXX XXXXXXX, XXXX XXXXXXX XXXXXXX XXXXXXX XXXX (XXXXX FBS) + 10% DMSO XXXX XXXXXXX XXXXXXX XXXXXXX XXXXXXX XXXXXXX, XXX C

Thawing and Culturing Cells

1. XXXX XXXXXXXXXX XXXXX XXXXX XXXXXXXXXX XXXX XXXXXXX, XXXX XXXXXXX XXXXXXX XXXXX XXXX XXXXXXX XXX XXXXXXXXXX XXXXXXXXXX XXXXXXXXXX XXXXXXXXXX
2. XXX XXXXX XXXXXXX, XXXXX XXX XXXXXXXXXX XXXXXXXXXX XXXX XXXXXXXXXX XXXXXXX XXXX -150°C XXXX XXXXXXXXXX XXX XXXXXXX XXXXXXX XXXXXXX, XXX XXXXXXXXXX
3. XXXXXXX XXXXXXX XXXXXXX, XXXXXXX XXX XXXXXXXXXX XXXXXXXXXX XXX XXXX XXXXXXXXXX XXXXXXX XXXX XXXXXXXXXX XXX 37 XXXXXXXXXX XXXXXXXXXX XXX XXXX XXXXXXXXXX
4. XXXX XXX XXX XXXXXXXXXX XXXXXXX XXXXXXXXXX XXXXXXXXXX XXXXXXX, XXXXXXX XXX XXXXXXXXXX XXXXXXXXXX XXXXXXXXXX 70% XXXXXXX XXXXXXXXXX
5. XXXX XXXXXXXXXX XXX XXXXXXXXXX XXXXXXXXXX XXXXXXXXXX XXX XXXXXXX XXXXXXX XXXXXXXXXX XXXXXXXXXX XXXXXXXXXX XXXXXXXXXX 15 μl XXXXXXXXXX 8 μl XXX XXXX XXXXXXXXXX XXXXXXXXXX
6. XXXXXXXXXX XXX XXXXXXXXXX XXXXXXXXXX XXXXXXXXXX -300 x g XXXXXXXXXX 3 XXXXXXX XXXX XXXXXXXXXX XXX XXXXXXXXXX, XXXXXXXXXX XXXXXXXXXX XXX XXXXXXXXXX XXXXXXXXXX XXXXXXXXXX
7. XXXXXXX XXXXXXXXXX XXX XXXXXXX XXXXXXXXXX -10 μl XXX XXX XXXX XXXXXXXXXX XXXXXXX XXXXXXX XXXXXXXXXX, XXXXXXX XXX XXXXXXXXXX XXX XXX XXXXXXXXXX XXXXXXXXXX T2
8. XXXXXXXXXX XXX XXXXXXXXXX XXX XXXXXXXXXX XXXXXXXXXX XXXXXXXXXX XXX XXX XXXXXXXXXX, XXXX XXXXXXXXXX XXXXXXXXXX XXXXXXXXXX XXXXXXXXXX

Incubation Atmosphere 37°C, 5% CO₂, XXXXXXXXXX XXXX

Flask Coating XXX XXXX

Freezing Procedure XXXXXXX XXXXX XXXXXXXXXX XXXXXXXXXX XXXXXXX XXXX XXXXXXXXXX XXXXXXXXXX XXXXXXXXXX XXX XXXXXXX XXXXXXX XXX XXXXXXXXXX XXX XXXXXXXXXX XXX XXXXXXXXXX XXX XXXXXXXXXX XXX -78°C

Shipping Conditions XXXXXXX XXXXX XXXXXXXXXX XXXXXXXXXX XXXXXXX XXXX XXXXXXXXXX XXXXXXXXXX XXX XXXXXXX XXXXXXX XXX XXXXXXX XXX XXXXXXXXXX XXX XXXXXXXXXX XXX XXXXXXXXXX XXX -78°C

Storage Conditions XXXXXXXXXX XXXXXXXXXX XXXXXXX, XXX XXXXXXXXXX XXX XXXXXXXXXX XXXXXXXXXX XXXXXXXXXX XXXXXXX XXX XXX XXXXXXXXXX XXXXXXXXXX XXX -150 XXX 196 XXXXXXXXXX XXXXXXXXXX XXXXXXXXXX XXXXXXXXXX

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Sterility

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XXXXXX HLA

- A***: 02:01:01
- B***: 18:01:01, 44:02:01
- C***: '05:XX
- DRB1***: 03:01:01, 15:01:01
- DQA1***: '01:02:01, '05:01:01
- DQB1***: '02:01:01, '06:02:01
- DPB1***: '02:01:02, '04:01:01
- E**: 01:01:01