ESTABLISHMENT AND MOLECULAR CHARACTERIZATION OF A NOVEL HUMAN UTERINE CARCINOSARCOMA CELL LINE (ESCA)

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OBJECTIVE

A new human uterine carcinosarcoma cell line (ESCA) was established and characterized.

METHODS

The tissue from surgery was treated to monolayer cells by cutting or grinding as much as possible. The cells were suspended in PBS and the cell pellet was collected and seeded to a new dish after half an hour, then cultured with Medium R1MP added 12% fetal bovine serum.

RESULTS

- ESCA was successfully passed to more than 100 generation.
- Monolayer cells were polymorphic, small round mostly with a fraction of fusiform or polygon. (Figure 1)
- ESCA showed a double time of 48h. (Figure 2)
- The chromosome number ranged from 52-58 with severe anomaly structure and number. (Figure 3)
- ESCA could be transplanted with 100% success ratio and produced tumors mimicking the donor tumor morphological and immunohistochemically. (Figure 4)
- Whole exome sequence showed both ESCA and the tissue block harbored HES4 missense and frame shift mutation as well as PTGDR missense mutation, ARHGAP35 in frame deletion, and with TP53 nonsense mutation, however, without PIK3CA, PTEN and FBXW7 and KRAS mutation. (Figure 5)

Figure 1

Figure 2

Figure 3

Figure 4

Figure 5

CONCLUSION

A new human uterine carcinosarcoma cell line (ESCA) was established harbored HES4 and PTGDR missense mutation. The cell showed good tumorigenicity with rich blood supply in the xenografts. The cell line would probably be a good model for exploring the molecular mechanism of UCSs.