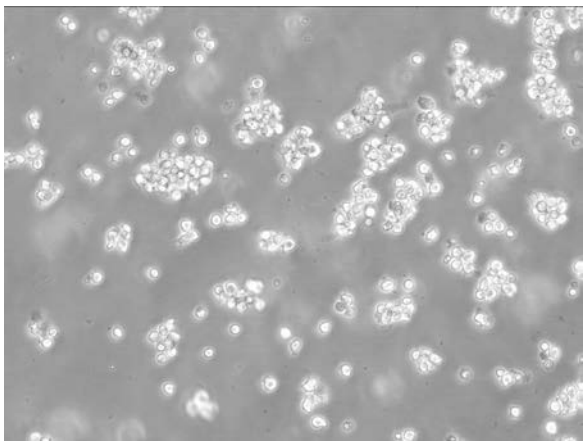
Cell line profile

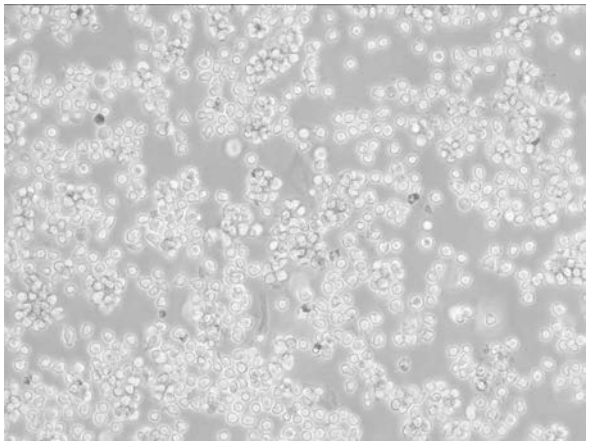
Karpas 422 (ECACC catalogue no. 06101702)

Cell line history

Karpas 422 was established from a pleural effusion of a 73 year old woman diagnosed with B-cell non-Hodgkin lymphoma. Her cancer was intra-abdominal, and developed from B-cells in the lymphatic system leading to her death in 1986 (Dyer *et al*, 1990).



24 hours post resuscitation



Cells prior to freezing

Key characteristics

Karpas 422 is a Human B cell non-Hodgkin lymphoma (NHL) cell line. Non-Hodgkin lymphomas are heterogeneous disorders characterised by the uncontrolled growth of lymphoid cells (Mounter and Leonard, 1999). Karpas 422 has been shown to have an abnormal karyotype. The cell line is typified by rounded or polygonal cells growing singularly or in small clusters in suspension. These cells have been found to be resistant to chemotherapy, making Karpas 422 a useful cell line for cancer research.

Applications

Karpas 422 is one of the most popular cell lines supplied by ECACC. Due to its resistance to chemotherapy, it is used as a model to validate methods of cancer treatment (Deggerdal *et al*, 1995) for example the "CHOP" strategy for NHL treatment,(so called after the chemicals used: Cyclophosphamide, Doxorubicin hydrochloride, Oncovin and Prednisolone). There have, however, been calls for new treatments to supersede the CHOP method (Fisher, 2000) and it is hoped that Karpas 422 could play a role in their development.

Culture tips

Karpas 422 should be cultured in RPMI 1640 medium supplemented with 2mM Glutamine and 20% Foetal Bovine Serum (FBS).The cultures should be maintained at a relatively high cell density, between 5-20 x 10^5 cells/ml at 37°C /5% CO_2, splitting (1:2) fully saturated cultures every 2-4 days. When starting the ampoule from frozen, the cryo-protectant should be removed. This is achieved by adding the thawed cells to a conical centrifuge tube, carefully adding ~4ml media and taking a sample to perform a cell count. Centrifuging the cell suspension at 100-150 x g for 5 minutes, removing the medium and re-suspending the

pellet at 5 x 10^5 cells/ml in fresh medium. Once the cell line has been established, the serum concentration can be reduced to 10%. These cells should be handled under laboratory containment level 2.

Related cell lines	ECACC catalogue number	Description
Karpas – 25	06072601	Human acute plasma cell leukaemia
Karpas – 929	06072606	Human multiple myeloma
Karpas – 1106P	06072607	Human B-Cell Non-Hodgkin's Lymphoma
Karpas – 1718	08072401	Human splenic lymphoma
Karpas – 231	06120601	Human B-cell leukaemia
Karpas – 299	06072604	Human Non-Hodgkin's Ki-positive Large Cell Lymphoma
Karpas – 384	06120602	Human T-cell non-Hodgkin lymphoma
Karpas – 417	06100302	Human myeloma
Karpas – 45	06072602	Human T-cell Leukaemia

Key references

1. Dyer, M.J., et al., *A new human B-cell non-Hodgkin's lymphoma cell line (Karpas 422) exhibiting both t (14;18) and t(4;11) chromosomal translocations.* Blood, 1990. **75**(3): p. 709-14.
2. Mounter, P.J. and A.L. Lennard, *Management of non-Hodgkin's lymphomas.* Postgraduate Medical Journal, 1999. **75**(879): p. 2.
3. Deggerdal, A.H., et al., *Semiquantitative polymerase chain reaction for t(14;18) in follicular lymphomas: a colorimetric approach.* Lab Invest, 1995. **72**(4): p. 411-8.
4. Fisher, R.I., *Diffuse large-cell lymphoma.* Annals of Oncology, 2000. **11**(suppl_1): p. S29-S33.