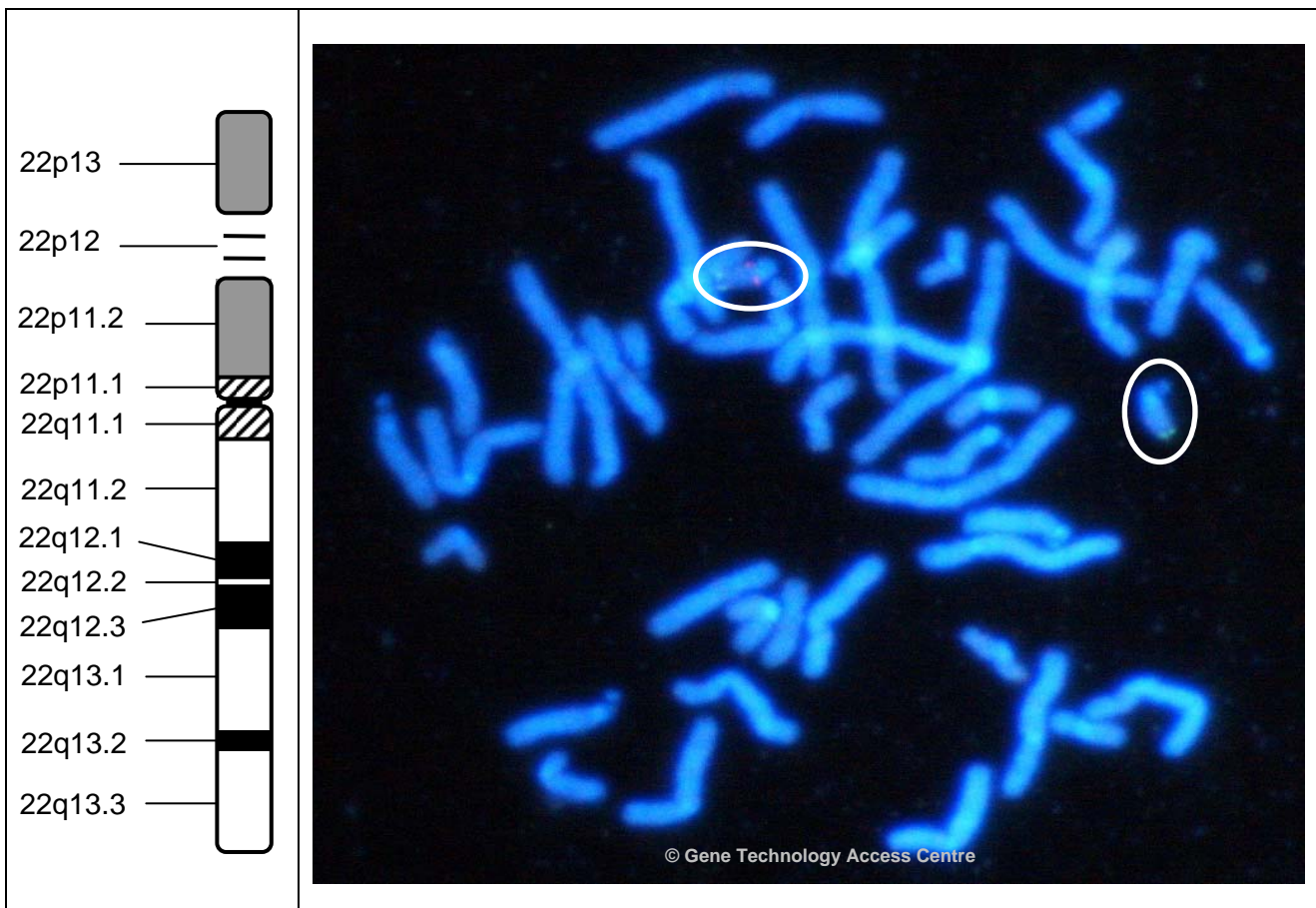
	<h2 style="margin: 0;">CELLS ONLINE WORKSHEET</h2> <h3 style="margin: 0;">Unit 4 Biology</h3>
TOPIC	FLUORESCENCE <i>IN SITU</i> HYBRIDIZATION (FISH)

Fluorescence *in situ* hybridization, or FISH, is a method for detecting DNA sequences in cell chromosomes with fluorescent probes. After sequence-specific binding with the probes, the DNA in the chromosomes is counter-stained with DAPI, a blue fluorescent dye. On the left is an ideogram (a chromosome map) of human chromosome 22 showing the banding patterns seen in a karyotype. On the right, you are observing the chromosomes of a human white blood cell that is undergoing division at 1000X magnification.



Download this page, place in your notebook and answer the following questions.

- Q1: Examine the ideogram of chromosome 22. Which arm of the chromosome is longer – p or q?
- Q2: Two fluorescent probes were used to stain the chromosomes. The orange probe binds to 22q11.2 and the green probe binds to 22q13.3. Indicate where each probe binds on the ideogram.
- Q3: Examine the image of the chromosomes in the FISH experiment. Which pair of chromosomes is circled? Explain your answer.
- Q4: What sort of chromosomal anomaly is indicated by the staining pattern of the orange probe?
- Q5: Look up Di George syndrome and find out about the effects of this chromosomal anomaly on the health of the individual.

These images were taken at GTAC using our Nikon TE2000-U Microscope