The Haematological Malignancies Clinical Research Unit focuses on three main objectives:

- Molecular research of haematological cancer: the study of cancer-induced changes at the proteomic and genomic levels. We aim to: i) find new genomic and proteomic biomarkers for a better diagnosis of these haematological diseases; ii) identify new molecular alterations as predictors of response to treatment, e.g. to study minimal residual disease; and iii) study immune mechanisms of cancer control, with a special focus on NK cells.

- In vitro research: i) to establish the effects of new anticancer molecules in vitro models of the disease; ii) to determine the mechanisms of resistance to anticancer drugs.

- Clinical research: to translate preclinical findings to the patients through a phase I clinical trial unit.

**Clinical Research Unit**

**Clinical Research Unit**

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2. **In vitro research:**
   - Establish the effects of new anticancer molecules in vitro models of the disease.
   - Determine the mechanisms of resistance to anticancer drugs.

3. **Clinical research:**
   - Translate preclinical findings to the patients through a phase I clinical trial unit.

**Overview**

The most relevant achievements of our Group in 2016 were:

- We published the first report of exome sequencing in Multiple Myeloma (MM).
- We redefined the role of stringent complete response in MM.
- We reported a new cell therapy approach based on the infusion of NK cells in MM.
- We contributed towards redefining treatment strategies for Multiple Myeloma (MM).
- We evaluated the potential therapeutic benefits of macrophage reprogramming in multiple myeloma.

**Publications**

- Cross NC et al. (2016). Phenotyping of multiple myeloma macrophages (MM-MØ) from bone marrow (BM) patient samples. A) Multi-coloured staining of BM aspirates containing particles from active disease MM patients, as indicated. Upper panels represent panoramic views, whereas bottom panels are magnified ones. Nuclear-4,6-diamidino-2-phenylindole appears in blue in all cases. (B) Plot showing the mean fluorescence intensity for each marker in CD163+ tumour-associated macrophages (TAM); n = 10 cases. Cells > 25 arbitrary units (a.u.) are considered positive, relative to negative control. Scale bars are indicated.

**Selected Publications at Other Institutions**