



# Use of an F-DEX Monocyte Binding Assay to Measure Steroid Responsiveness of Patients and Their Related Donors Undergoing Stem Cell Transplant



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## Abstract

**Background:** Graft Versus Host Disease (GVHD) is a complex disease resulting from donor T-cell recognition of a genetic disparate recipient, which is unable to reject donor cells after allogeneic transplant. Glucocorticoids (steroids) are the mainstay of acute GVHD therapy. Glucocorticoid resistance has been characterized in several inflammatory conditions including asthma, rheumatoid arthritis, systemic lupus erythematosus, ulcerative colitis, and Crohn's disease. Glucocorticoid resistance has also been seen in a subset of patients with GVHD. However, to date, the biology of this steroid refractoriness in the treatment of GVHD has not been examined.

### Objective and hypotheses:

We propose to study the steroid sensitivity of bone marrow transplanted patients and their related donors using a Fluorescein labelled dexamethasone (F-DEX) monocyte binding assay to help in the treatment of these patients

### Method:

Collection of pre- and post-BMT blood samples from patient/donor pairs who plan to undergo allogeneic bone marrow transplant. The samples will be analysed using a Fluorescein labelled dexamethasone (F-DEX) monocyte binding assay of collected monocytes.

### Results:

Preliminary results so far show that the F-Dex binding in the recipient prior to transplant was higher than in the donor and controls. However, 30 days after transplant, the binding profile is similar to the donor.

### Conclusion:

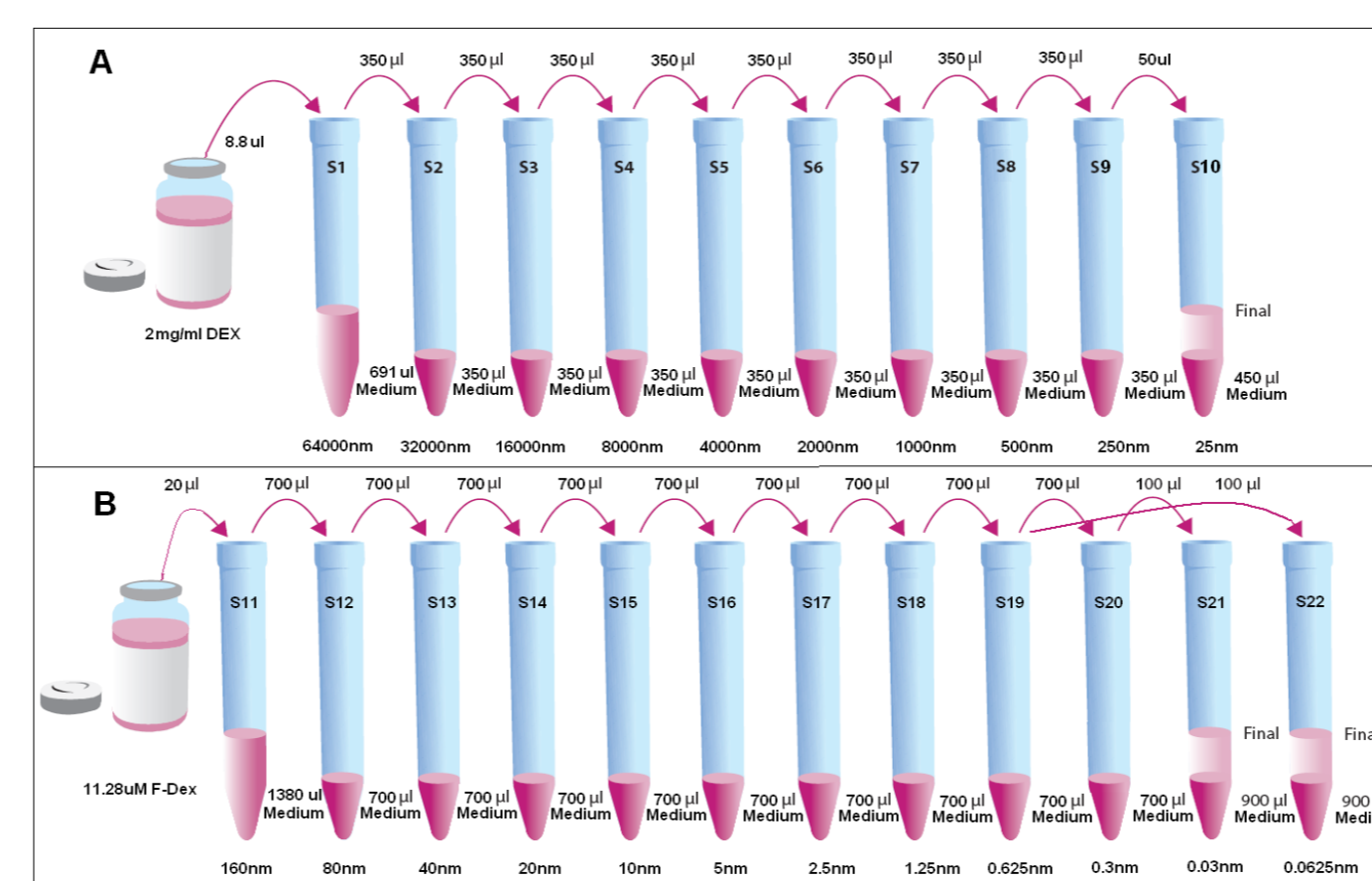
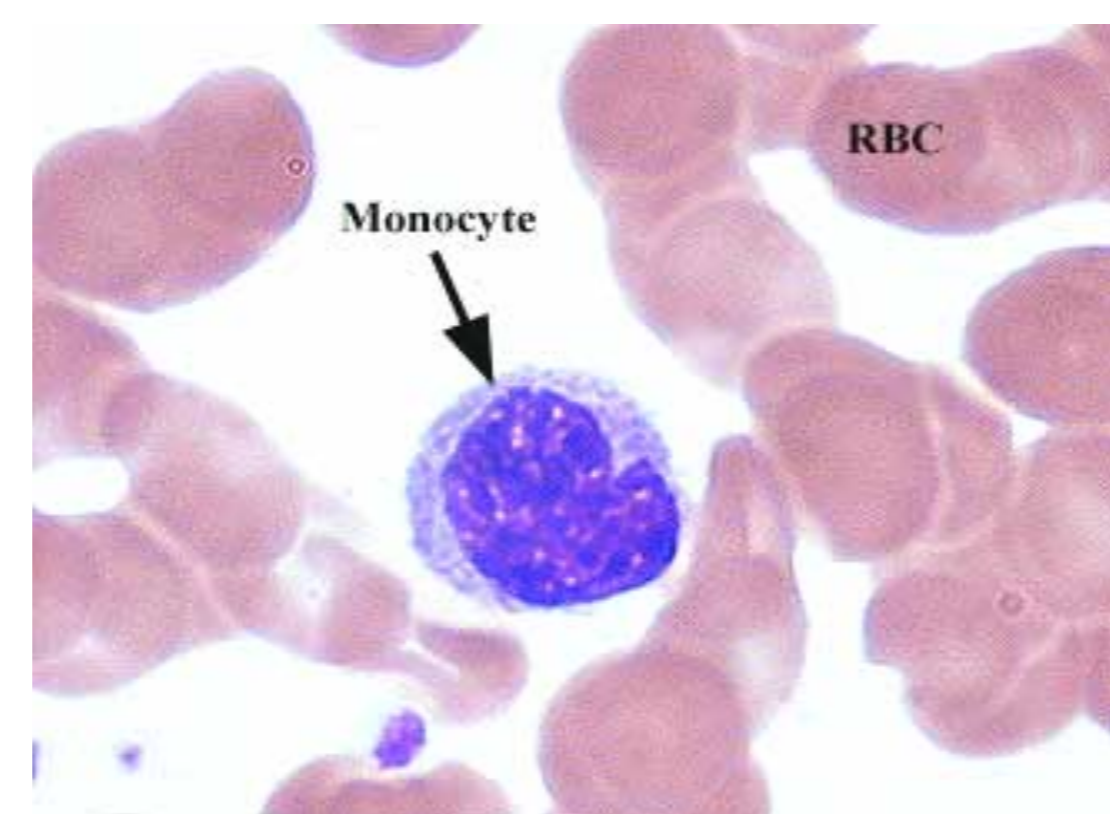
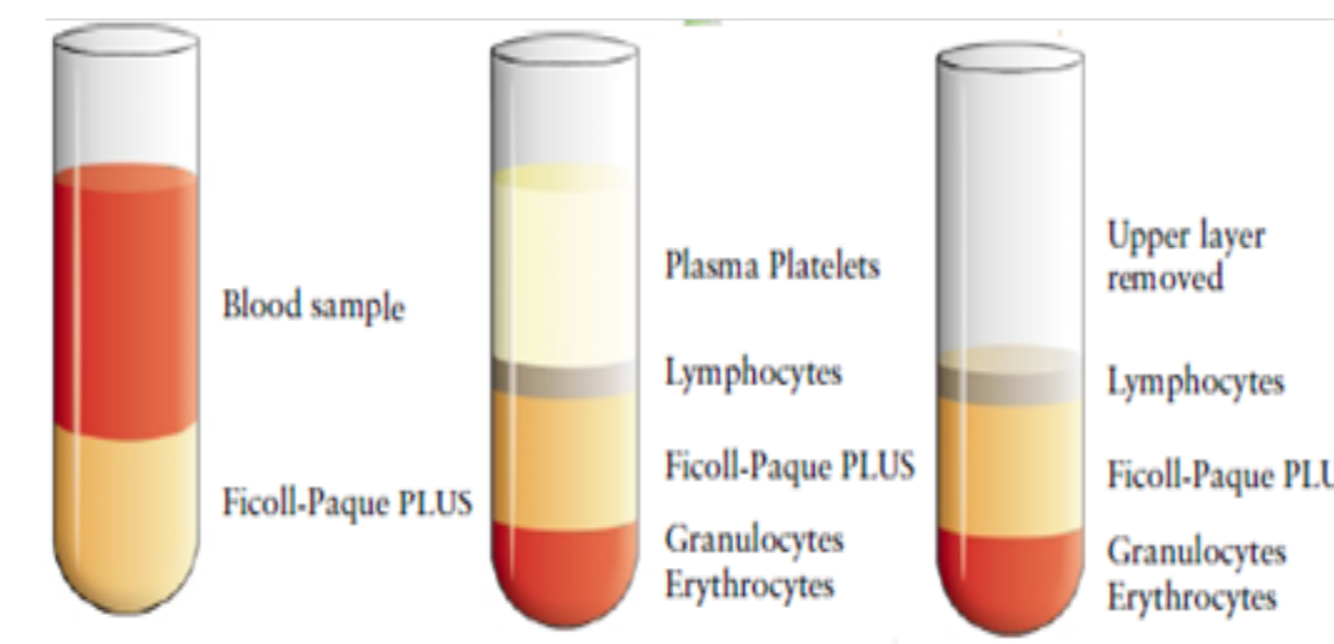
Preliminary results so far show that the F-Dex binding in the recipient prior to transplant was higher than in the donor and controls. However, 30 days after transplant, the binding profile is similar to the donor. This could be due to influence of the transplant on the glucocorticoid receptor. We will need to examine this further with more patients.

## Objective

We propose to study the steroid sensitivity of bone marrow transplanted patients and their related donors using a Fluorescein labelled dexamethasone (F-DEX) monocyte binding assay to help in the treatment of these patients.

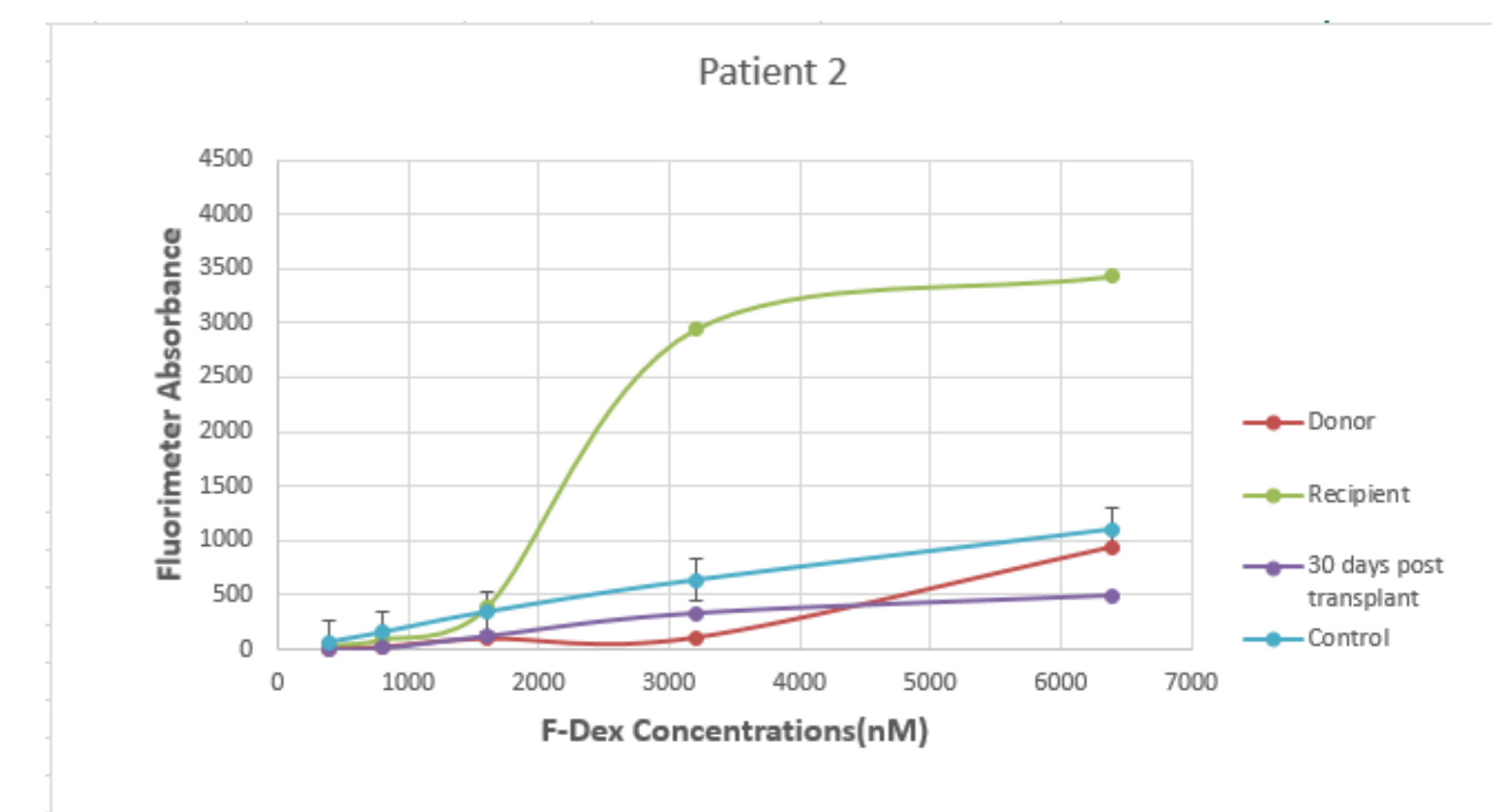
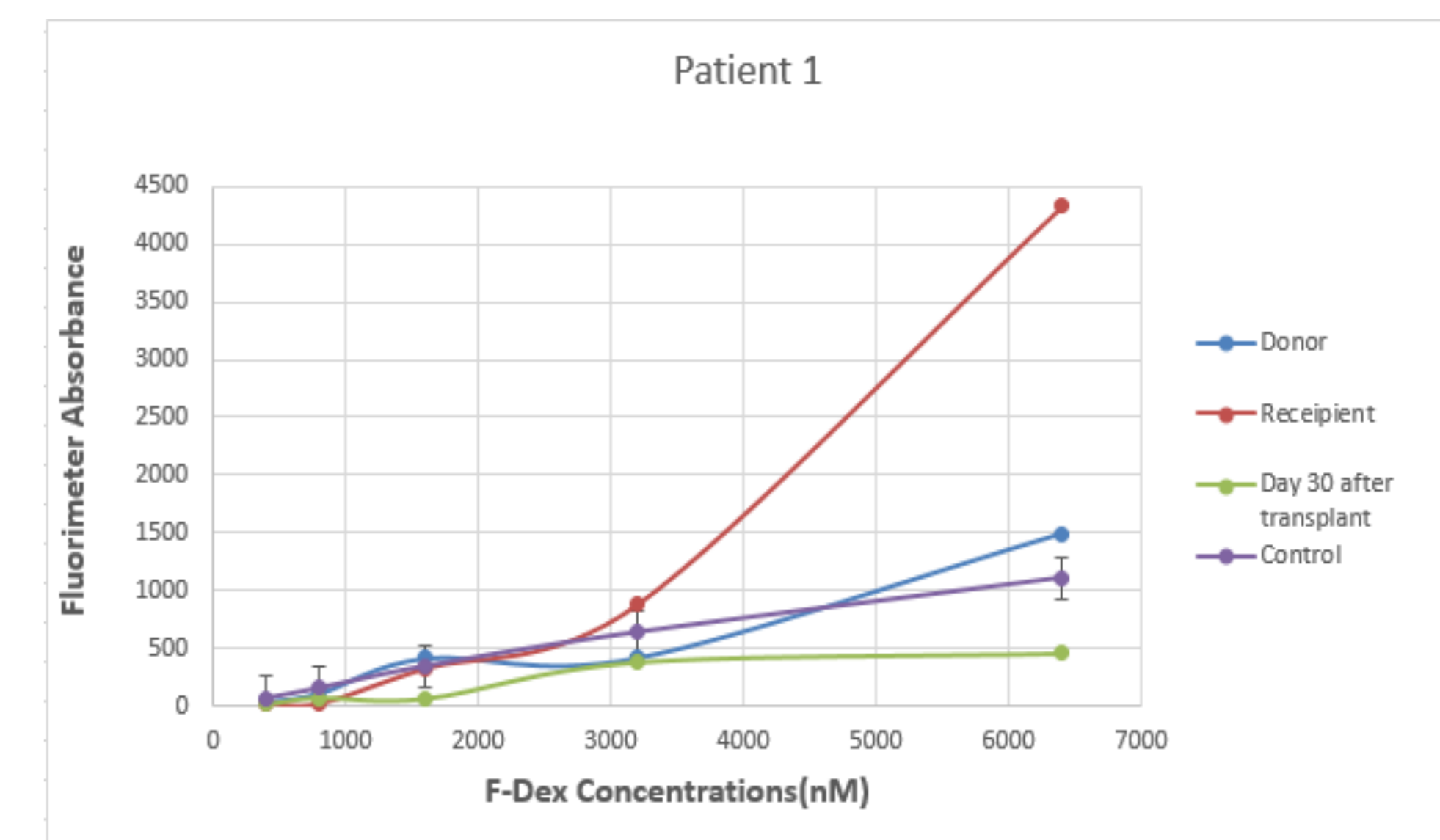
## Methods

Collection of pre- and post-BMT blood samples from patient/donor pairs who plan to undergo allogeneic bone marrow transplant. The samples was analysed using a Fluorescein labelled dexamethasone (F-DEX) monocyte binding assay of collected monocytes



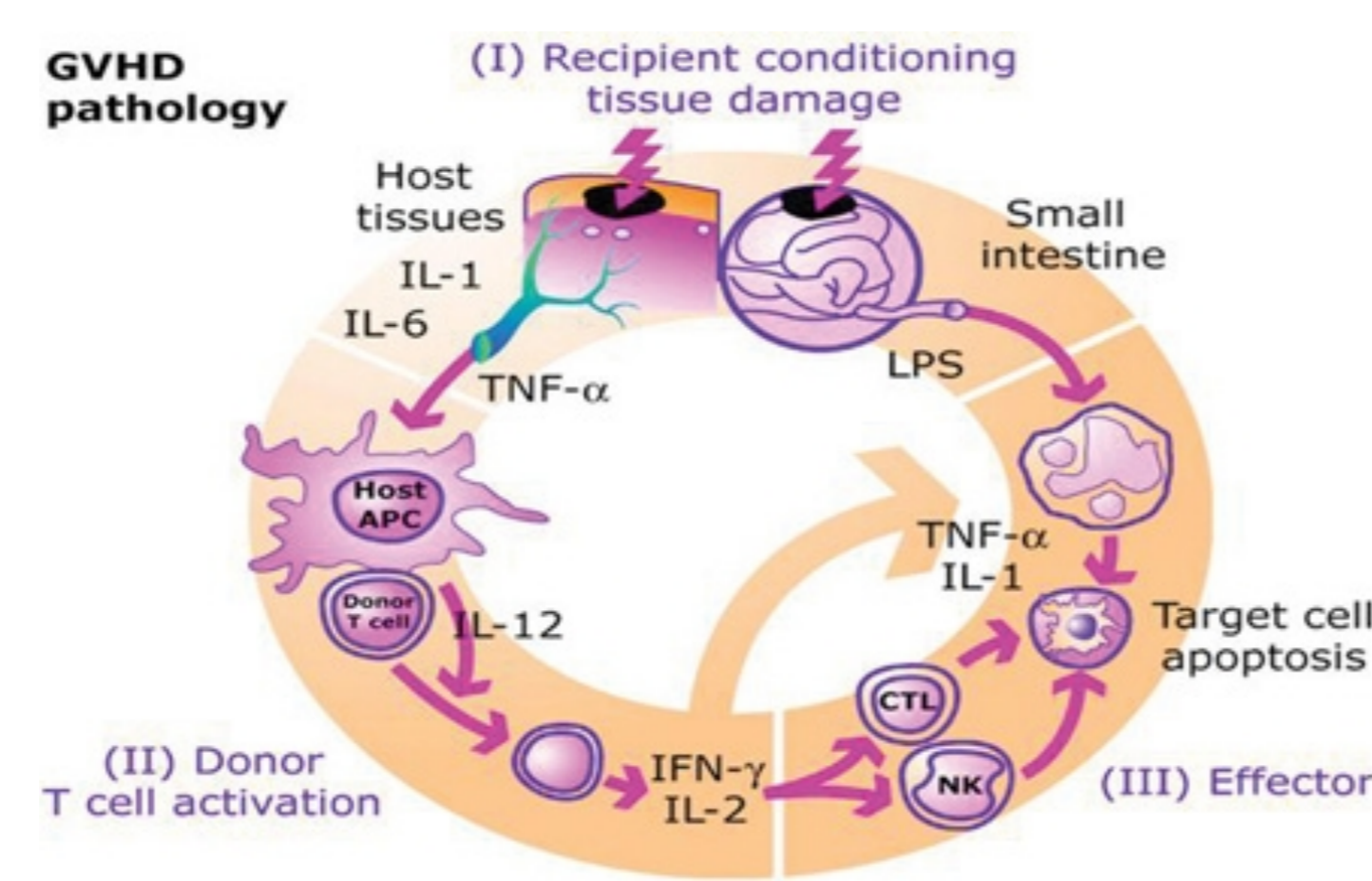
## Results

Preliminary results so far show that the F-Dex binding in the recipient prior to transplant was higher than in the donor and controls. However, 30 days after transplant, the binding profile of the recipient is similar to the donor.



## Background

Graft Versus Host Disease (GVHD) is a complex disease resulting from donor T-cell recognition of a genetic disparate recipient, which is unable to reject donor cells after allogeneic transplant. Glucocorticoids (steroids) are the mainstay of acute GVHD therapy. Glucocorticoid resistance has been characterized in several inflammatory conditions including asthma, rheumatoid arthritis, systemic lupus erythematosus, ulcerative colitis, and Crohn's disease. Glucocorticoid resistance has also been seen in a subset of patients with GVHD. However, to date, the biology of this steroid refractoriness in the treatment of GVHD has not been examined.



Courtesy of Romeo A. Mandanas, MD, FACP.

## Discussion

Preliminary results so far show that the F-Dex binding in the recipient prior to transplant was higher than in the donor and controls. However, 30 days after transplant, the binding profile of the transplanted recipient is similar to the donor. This could be due to influence of the transplant on the glucocorticoid receptor. We will need to examine this further with more patients.

## References

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