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Vasculature mapping

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A few years ago Renata Pasqualini and Erkki Ruoslahti developed an in vivoselection method to identify peptides that target specific vascular beds following intravenous administration of random peptide phage-display libraries in mice. In the February issue of Nature Medicine, Pasqualini's group at the MD Anderson Cancer Center in Texas report the application of '*in vivo* phage display' to characterize the human vasculature (*Nature Medicine* 2002, **8:**121-127). They injected a large-scale, random peptide library into a terminally ill patient and collected tissue samples 15 minutes post-infusion. They recovered phage from different organs and carried out a high-throughput analysis of over 4,000 phage inserts. Comparison of the selected tripeptide motif frequencies revealed a non-random, tissue-specific distribution. They then used a phage-overlay histological assay to validate peptide sequences specific for prostate or skin tissues. This study represents a first step towards a well-characterized map of the heterogeneity within the human vasculatuure, opening up the possibilities for targeted drug delivery strategies.

References

1. Organ targeting *in vivo* using phage display peptide libraries.

2. *Nature Medicine*, [http://medicine.nature.com]

3. MD Anderson Cancer Center, [http://www.mdanderson.org]