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(54) **Title**: *IN VIVO* TUMOR VASCULATURE IMAGING

(57) **Abstract**: The present invention relates to non-invasive methods of and uses for *in vivo* imaging tumor vasculature in a subject comprising detecting a fluorescence labelled anti-CD31 antibody. In a further aspect the present invention relates to non-invasive methods of and uses for *in vivo* monitoring the therapeutic efficacy of an anti-angiogenic agent in a subject comprising detecting a fluorescence labelled anti-CD31 antibody. In addition, a kit for use in the methods of the present invention is provided which comprises a fluorescence labelled anti-CD31 antibody and means for near-infrared fluorescence imaging to detect the antibody in a subject.