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ESR No. 13
Host Institution: QVQ, Utrecht
ESR enrolled at: University of Amsterdam, Netherlands

Institute	QVQ
Lab	QVQ Research
Responsible person	Mohamed El Khattabi
Job title	Early Stage Researcher: PhD thesis on Development of Llama antibody technology for *Candida* diagnostics
Job description	Short description: - Required degree: BSc (Hons) (e.g. U.K./Ireland), MSc in biology, biochemistry or equivalent - Preferred qualification and expertise: immunology, experience with molecular-biological techniques, IF techniques, yeast knowledge and bioinformatics - Duration: 36 months - Language: English (essential), - Contact: Mohamed El Khattabi, Tel.: +31(0)30-2533421; Mail: m.elkhattabi@qvquality.com **QVQ:** QVQ is a 5 years old biotech company focusing on the production and development of Llama antibody-based imaging agents for imaging and research purposes, including diagnostics. QVQ works closely together with universities, institutes and companies all over the world. An essential element of its policy to provide top class molecules is to publish the results in high rated journals QVQ wants to contribute to early detection of diseases by providing top quality validated Imaging and Research Agents based on their C-direct labelled single domain antibodies from camelids (professionally called functionalized VHH). **PhD project:** Objectives: Validation of genomic and proteomic data by developing antibodies and testing in relevant samples. For example, (VHHs) specific for Candida species will be selected from phage display libraries from llamas immunized with different morphological forms of Candida albicans. Such VHHs coupled to a solid support will be utilized to deliver proof-of-principle for the concentration of Candida cells from relevant clinical samples to increase diagnostic value. Moreover, VHH will be developed against known pathogenic and resistance marker and assay whether detection with VHH alone can allow complete identification of the fungi causing infection. **Methodology:** Llama immunization, VHH-phage display library construction. VHH selection. VHH characterization using biochemical and biophysical techniques. Molecular biological techniques are used to assess effect on fungi (microscopy, adherence test,). Generation of fungi scavenging columns. **Expected Results**: A panel of VHH specific to fungi strains or pathogenicity or resistance biomarkers to be studied in collaboration with CBS (P2), which should result in high impact scientific papers. A number of these VHH will be formatted into scavenging columns to prove concentration of fungi from clinical samples for further analysis using standard methods (such as PCR) in collaboration with Bruker (P7), which should result in products improving the diagnosis of Candida infection. **Planned secondment(s):** P2 KNAW (1-3 months; Y1; to prepare Candida samples for immunization, selection and screening); P7 BRUKER (2 weeks; Y2; to optimize analyses after enrichment with VHH columns).