ESP Advanced Training (EAT) Centre for Endocrine Pathology with an emphasis on Thyroid and Parathyroid Tumours

a) Name of the Centre

ESP Advanced Training (EAT) Centre for Endocrine Pathology with an emphasis on Thyroid and Parathyroid Tumours

The Centre is based on **Ipatimup** (Institute of Molecular Pathology and Immunology of the University of Porto) "consortiated" with **Service of Pathology of the Centro Hospitalar S. João/Medical Faculty of the University of Porto** (CHSJoão-FMUP).

Address of Ipatimup: Rua Júlio Amaral de Carvalho, 45; 4200-135 Porto, Portugal

b) Chair of the Centre

Manuel Sobrinho-Simões, MD, PhD
Prof. and Director, Ipatimup
e-mail:ssimoes@ipatimup.pt

c) Head of the Training Programme

Prof. Manuel Sobrinho Simões in collaboration with Prof. Catarina Eloy (Head of the Pathology Unit of Ipatimup), Prof. José Manuel Lopes (Consultant on Neuroendocrine Tumours at Ipatimup and CHSJoão) and Prof. Paula Soares (Head of Cancer Biology Group at Ipatimup).

d) Details about specific areas in which training can be offered

Both Ipatimup and CHSJoão-FMUP are tertiary referral centres for endocrine pathology with very good labs for cytopathology (e.g. number of cytological specimens of thyroid per year in Ipatimup is about 2400, and in CHSJoão-FMUP about 1700), histopathology (e.g. number of histological specimens of thyroid per year in Ipatimup is about 100 and in CHSJoao-FMUP about 600) and molecular pathology (e.g. number of MEN2 molecular diagnosis is 30 per year and number of MEN1 molecular diagnosis is 5-10 per year in Ipatimup). The number of consultancy cases of endocrine pathology (mainly thyroid tumours) received from abroad is about 300 cases per year.

In both institutions (Ipatimup and CHSJoao/FMUP) the Endocrine Pathology Units consist of multidisciplinary teams including experienced endocrine cyto– and histopathologists, endocrinologists, endocrine surgeons, fellows and scientists centred on molecular pathology.

Manuel Sobrinho Simões and Catarina Eloy are consultant pathologists, specialized in thyroid and parathyroid tumours, as well as in paranganglioma and phaechromocytoma; José Manuel Lopes is a consultant pathologist specialized in neuroendocrine tumours; Paula Soares is a scientist with biomedical background with a special interest in the biology and molecular pathology of endocrine tumours and consultant in the molecular diagnosis of MEN2 and MEN1 syndromes. They all are actively involved in national and international networks concerning endocrine tumours. They also publish regularly in this area of expertise and have co-authored some seminal papers, namely in the molecular pathology of thyroid tumours (A few references are included in the list at the end).

The specific areas in which training can be offered are the following:

Cytopathology with ultrasound-guided fine needle aspiration
Macroscopy and histopathology
Immunohistochemistry
Molecular pathology for diagnosis, prognosis and therapy selection.

The training programme will be partially tailored to the needs of each applicant using as a frame the routine of the Labs of Cytopathology and Surgical pathology/Histopathology both in Ipatimup and in CHSJoão-FMUP. The workload on Thyroid Lesions of the Cytopathology Lab at Ipatimup is 2 hours of practical work of FNA per day plus 2 hours of microscopic observation per day. The workload on Endocrine Pathology of the Surgical Pathology/Histopathology Labs at both sites, plus Consultancy cases, is about 4 hours per day (3 hours +1 hour with tutor per day). The training at the Histopathology/Immunohistochemistry Lab will be modular: One or two weeks – 35 hours. The training at the Molecular Pathology Lab is also modular: 2 weeks, equivalent to 35 + 35 hours. In both instances (Immunohistochemistry and molecular pathology) the modules will include training in standardization of pre-analytic procedures and quality control.

Besides the daily sign out of Cytopathology and Histopathology, the fellow can (and should) study the cases filed in the Educational Case Files of Cytopathology and Histopathology (including consultancy cases that have been collected over the years).

The fellow can participate in the Clinico-Pathologic Meetings of CHSJoão-FMUP (once or twice a week), as well as in the multidisciplinary team meetings (once a week) whenever felt appropriate. The fellow can also participate in the weekly meetings of the Cancer Biology Group – usually on Endocrine Pathology issues – and in the Seminars and Journal Club of Ipatimup whenever felt appropriate.

In the last 20 years many foreign pathologists and residents in pathology (average of 8 fellows per year) from more than 30 european, south american, asiatic and african countries have made fellowships in different fields of Endocrine Pathology in the Centre ("Consortium") Ipatimup/CHSJoão-FMUP.

e) Number of positions offered for each year; expected duration of the training

Three fellows can be hosted per year, for a duration of 2 months (9 weeks) each. Exceptionally, the visit can be extended to 12 months in case the fellow is involved in a translational research project.

f) Specific periods of the year when the visit may be realized

In each of the 1st, 2nd and 4th trimesters of the year.

The exact dates will be defined by direct contact, using as a first approach the following periods: mid January to mid March, mid April to mid June and mid October to mid December.

g) Contact address for requesting details by the applicant

Fátima Magalhães (Secretariat of Prof. Sobrinho Simões at Ipatimup and Medical Faculty); e-mail:fmagalhaes@ipatimup.pt

We further declare that we meet the requirements for hosting fellows in our Centre:

No charge for training

Help in finding low cost accommodation

Help in getting visa, insurance or other documents if required

After completion of the training period the trainee will receive a detailed certificate describing the work

If necessary a letter of invitation can be provided to the applicant

Short list of references

Thyroid and Parathyroid tumours

- Máximo V et al. Mitochondrial DNA somatic mutations (point mutations and large deletions) and mitochondrial DNA variants in human thyroid pathology: a study with emphasis on Hürthle cell tumors. Am J Pathol 160:1857-65, 2002.
- Soares P et al. BRAF mutations and RET/PTC rearrangements are alternative events in the etiopathogenesis of PTC. Oncogene 22:4578-80, 2003
- Sobrinho-Simões M - first author or co-author of many chapters on Thyroid Tumours of the WHO Book on Endocrine Pathology (3rd edition, 2004)
- Máximo V et al.Somatic and germline mutation in GRIM-19, a dual function gene involved in mitochondrial metabolism and cell death, is linked to mitochondrion-rich (Hurthle cell) tumours of the thyroid. Br J Cancer 92:1892-8, 2005
- Trovisco V et al. Type and prevalence of BRAF mutations are closely associated with papillary thyroid carcinoma histotype and patients' age but not with tumour aggressiveness. Virchows Arch 446:589-95, 2005.
- Castro P et al. PAX8-PPARgamma rearrangement is frequently detected in the follicular variant of papillary thyroid carcinoma. J Clin Endocrinol Metab 91:213-20, 2006
- Volante M et al. Poorly differentiated thyroid carcinoma: the Turin proposal for the use of uniform diagnostic criteria and an algorithmic diagnostic approach. Am J Surg Pathol 31:1256-64, 2007.
- Sobrinho-Simões M et al. Follicular thyroid carcinoma. Mod Pathol Suppl 2:S10-8, 2011.
- Prazeres H et al. In vitro transforming potential, intracellular signaling properties, and sensitivity to a kinase inhibitor (sorafenib) of RET proto-oncogene variants Glu511Lys, Ser649Leu, and Arg886Trp. Endocr Relat Cancer 18:401-12, 2011.
- Soares P, Sobrinho-Simões M. Cancer: Small papillary thyroid cancers--is BRAF of prognostic value? Nat Rev Endocrinol 7:9-10, 2011.
- Faustino A et al. mTOR pathway overactivation in BRAF mutated papillary thyroid carcinoma. J Clin Endocrinol Metab 97: E1139-E1149, 2012.
- Vinagre J et al. Frequency of TERT promoter mutations in human cancers. Nat Commun 4:2185, 2013.
- Eloy C et al. Small cell tumors of the thyroid gland: a review. Int J Surg Pathol. 22:197-201, 2014.
- Melo M et al. TERT promoter mutations are a major indicator of poor outcome in differentiated thyroid carcinomas. J Clin Endocrinol Metab 99:E754-65, 2014.
- Eloy C et al. Poorly differentiated and undifferentiated thyroid carcinomas.Turk Patoloji Derg Suppl 1:48-59, 2015.
- Eloy C, Soares P, Maximo V and Sobrinho Simões M. Chapter 14. Thyroid and Parathyroid Glands. Book “Pathology of Head and Neck” 2nd edition (2016, in press).

Paraganglioma and Phaechromocytoma

- Lima J et al. High frequency of germline succinate dehydrogenase mutations in sporadic cervical paragangliomas in northern Spain: mitochondrial succinate dehydrogenase structure-function relationships and clinical-pathological correlations. J Clin Endocrinol Metab 92 4853-64, 2007.
- Martins RG et al. A founder SDHB mutation in Portuguese paraganglioma patients. Endocr Relat Cancer 20:L23-6, 2013.

Neuroendocrine Tumours (Frascati Consensus Conference participants; European Neuroendocrine Tumor Society – ENETS)

- Jensen RT et al. Well-differentiated duodenal tumor/carcinoma (excluding gastrinomas). Neuroendocrinology 84: 165-172, 2006.
- Rindi G et al. TNM staging of foregut (neuro)endocrine tumors: a consensus proposal including a grading system. Virchows Archiv 449: 395-401, 2006.
- Rindi G et al. TNM staging of midgut and hindgut (neuro) endocrine tumors: a consensus proposal including a grading system. Virchows Archiv 451: 757-762, 2007.
- Steinmueller T et al. Consensus guidelines for the management of patients with liver metastases from digestive (neuro) endocrine tumors: Foregut, midgut, hindgut, and unknown primary. Neuroendocrinology 87: 47-62, 2008.
- Pavel M et al. Palma Mallorca Consensus Conf P. ENETS consensus guidelines for the management of brain, cardiac and ovarian metastases from neuroendocrine tumors. Neuroendocrinology 91: 326-332, 2010.