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# Applying Ki67, Bcl2 and CD117 Immuno-Histochemical Expression in the Grading of Bronchopulmonary Neuroendocrine Tumors

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material for IHC staining. The accuracy of primary diagnosis was rechecked blindly by two expert pathologists, considering clinical and radiological evaluation. The diagnosis was according to 2004 WHO criteria. Total number of 19 carcinoid (5 of which had following resection performed in this center) tumors and 17 SCNETs were treated to inactivate endogenous peroxidase and stained with monoclonal, ready to use CD117, Ki67 and Bcl-2 antibodies (Novocastra Laboratories, Newcastle upon Tyne, United Kingdom). The external control tissue stained for CD117 was gastrointestinal stromal tumor while tonsillar lymphoid tissue was considered for Ki67 and Bcl2. The intensity of CD117, Bcl-2 and Ki67 staining was compared with background mast cells, lymphocytes and respiratory epithelium basal cells respectively and graded as null, 0.5 and 1. For harmonization purposes this grade was taken into account when assessing the percentage of stained neoplastic cells by multiplying the grade number and the percentage and reporting a Staining Index (SI). For Bcl-2 (nuclear) and CD117 (cytoplasmic/membranous), a SI of less than 26 was negative, while both 26-75 (weak) and above 75 (strong) were considered as positive. As for Ki67 (nuclear), a SI of less than 6 was negative while both 6-20 (weak) and above 20 (strong) were interpreted as positive. Two expert pathologists blindly evaluated the staining index of every case.

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#### **Availability of data and materials**

The datasets generated/analyzed during the current study are available through the corresponding author on reasonable request.

#### **Ethical approval and consent to participate**

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