methylation does not specifically reverse the resistance mechanism in the nutlin-3 resistant cells. Treatment with idasanutin (an Mdm2 inhibitor, which is undergoing clinical trials) also resulted in loss of viability of NPC cells.

**Conclusion:** Treatment of NPC cells with Mdm2 inhibitors results in the loss of viability of the cells. The mechanism of resistance to Mdm2 inhibitors in our cells is not due to p53 mutations or methylation.

**Keywords:** Mdm2 inhibitors; Nasopharyngeal carcinoma; p53

**CDS, P2.30**

The Effects of Berberine on Telomerase Activity and Expression of Colorectal Cancer Cell Line, HCT 116

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**Background:** Globally, colorectal cancer (CRC) is one of the most common cancers affecting male and female, which has been reported to be associated with increased telomerase expression and activity. Telomerase is the enzyme that functions to maintain the length of telomere which contributes to the unlimited proliferative potential in cancer cells. In this research, two subunits of telomerase are studied, namely human telomerase reverse transcriptase (hTERT) and human telomerase RNA component (hTERC). Methods: Telomerase expression was hypothesized to occur during S phase, hence, colorectal cancer cell line (HCT 116) cell cycle distribution was analyzed at 24, 48 and 72 hours of culture to determine the time-point which has the highest percentage of S phase. Screening of telomerase inhibitors (boldine, silimarin and berberine) on HCT 116 was done to determine the compound with the lowest concentration that caused 50% inhibition (IC50). Telomerase polymerase chain reaction (PCR) enzyme linked immunosorbent assay (ELISA) was done to determine the telomerase activity. TERT protein level was determined by western blot. TERT and hTERC mRNA expressions as well as relative telomere length were determined by Real Time-PCR. Results: The highest S phase percentage occurred at 48 hours. It was revealed that berberine had the lowest IC50. Berberine treatment caused cell cycle arrest indicated by the increment of G0/G1 percentage in berberine-treated HCT 116. Berberine treatment also caused decrement of telomerase activity due to downregulation of TERT protein, as well as TERT and hTERC mRNA. Berberine also delayed doubling time but did not significantly affect the relative telomere length of HCT 116. Conclusion: In summary, our research suggests that berberine could decrease telomerase activity and expression of HCT 116 which in turn inhibit the proliferative ability of the cells.

**Keywords:** Colorectal cancer, HCT 116, berberine, telomerase, cell cycle

**CO1**

Oral Cancer Patient Management: Adapting Clinical Practice Guidelines to Malaysian Context

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**Background:** Quality of care in every stage of oral cancer management is crucial to achieve optimal cancer outcomes and to improve quality of life of the cancer patients. An evidence-based framework outlining the current and best practices in patient management is essential for oral cancer teams to select the best option of oral cancer care. **Aim:** To adapt clinical practice guidelines for oral cancer management including diagnosis, treatment, and follow-up care, for use by healthcare professionals managing oral cancer patients in Malaysia. **Methods:** The concept of “Guideline Adaptation” was used. Core methodologies included reviewing of high quality evidence and adaptation of recommendations from existing guidelines, blended with expert judgements. The Practice Guideline Evaluation and Adaptation Cycle (PGEAC) consisted of six steps namely identifying clinical areas to promote best practice; literature search to identify existing guidelines; guideline assessment in terms of quality, currency, and content; adopting or adapting guidelines for local use; seeking multidisciplinary specialists’ feedback and finalising. **Results:** Fifteen potential existing guidelines were selected through systematic literature search. Only three were considered most appropriate for adaptation to the local context namely the National Comprehensive Cancer Network (2015), Belgian Healthcare Knowledge Centre (2014) and Scottish Intercollegiate Guideline Network (2006) based on good performance in the quality assessment using the Appraisal of Guidelines for Research and Evaluation (AGREE II)