targeted therapies that can disrupt these oncogenic pathways. Peptide-based drugs represent a promising avenue for precision oncology, offering high specificity, low toxicity, and potential to inhibit key molecular drivers of cancer. This study investigates the YHWYGYTPQNVT peptide, designed to interact with EGFR, and evaluates its effect on proliferation and migration of HeLa cells, a widely used model of cervical cancer. **Objectives:** This research aims to determine whether the YHWYGYTPQNVT peptide can effectively suppress EGFR-mediated growth signaling in HeLa cells, by analyzing cell proliferation, metabolic activity, and migration, aiming at establishing its potential as a therapeutic alternative to traditional cancer treatments. **Materials and Methods:** The YHWYGYTPQNVT peptide was synthesized using solid-phase peptide synthesis, purified via HPLC, and confirmed by mass spectrometry. HeLa cells were cultured in DMEM + 10% fetal bovine serum and incubated at 37°C with 5% CO_2. To establish a baseline proliferation rate, HeLa cells were plated at 5×104 cells in 6-well plates, and the growth curve was performed in sextuplicate over a 5-days period, with cell counts conducted on days 1, 3 and 5. For the experimental group, cells were treated with YHWYGYTPQNVT (80 μmol/mL). Statistical analysis was conducted using GraphPad Prism, with significance set at $p \leq 0.05$. **Results:** The YHWYGYTPQNVT peptide was synthesized efficiently with yield of approximately 45%. Chromatographic analyzes obtained by HPLC and mass spectrometry confirmed that the entire synthesis, cleavage, and purification process of peptides were performed efficiently. Control group displayed an aggressive proliferation rate with an exponential growth, reaching $\sim 96.8 \times 10^4$ cells, consistent with the known oncogenic potential of HeLa cells. In contrast, the peptide-treated group showed a significant reduction in proliferation, with final cell counts averaging 61.5×10^4 cells - corresponding to a 25.5% decrease compared to untreated cells. **Conclusion:** Our findings highlight YHWYGYTPQNVT as a promising EGFR-targeting agent capable of reducing cervical cancer cell proliferation. By directly interfering with EGFR-driven oncogenic pathways, this approach could lay the groundwork for a new class of peptide-based therapeutics in oncology. Further in vivo validation and molecular pathway analysis are necessary to determine its potential clinical application in patients with EGFR-overexpressing cervical tumors.

Keywords: Anti-EGFr-peptide, Cell proliferation, Cervical cancer, HeLa cells.

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COMPARISON BETWEEN 18F-PSMA AND 18F-FDG RADIOTRACERS FOR PET/CT IN THE EVALUATION OF PATIENTS WITH METASTATIC MELANOMA

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A B S T R A C T

Introduction/Justification: PET/CT has emerged in the last two decades as a dominant imaging modality used for staging, monitoring response and surveillance of melanoma using 18F-FDG as radiotracer. Recent publications have demonstrated the possibility of use of 18F-PSMA PET/CT as an additional resource to the evaluation of melanoma, due to the expression of Prostate-Specific Membrane Antigen protein (PSMA) in these cancer cells and because anti-PSMA antibodies react with malignant melanoma neo vasculature. **Objectives:** Would 18F-PSMA PET/CT have the potential role of a novel diagnostic imaging technique in melanoma cases? **Materials and Methods:** Eleven participants with diagnoses of metastatic melanoma underwent 18F-FDG PET/CT and 18F-PSMA PET/CT (24-hours interval), and the lesions uptakes were evaluated with both radiotracers. The results were grouped in three categories: A - greater expression of 18F-PSMA compared to 18F-FDG; B – equivalent uptake between the radiotracers; and C - greater expression of 18F-FDG compared to 18F-PSMA. **Results:** 18,1% of participants were in category A, 54,5% in category B and 27,2% in category C. The lesions with greater 18F-PSMA uptake compared to 18F-FDG were mainly in the brain, lungs, adrenals, and scattered throughout the chest. Furthermore, one subjects presented only 18F-PSMA uptake in brain metastasis, showing the importance of this method to the clinical follow-up of these patients. Our findings align with the Chang et al.'s, who demonstrated in vitro expression of PSMA in the neovasculature of melanoma lesion and with Snow et al.'s who observed PSMA positivity in endothelial cells of capillaries within stage III/IV melanoma metastases. **Conclusion:** Therefore, apart from the use of 18F-PSMA PET/CT in staging prostate cancer patients, this method shows a great potential in the evaluating of metastatic melanoma, still needing further and longer studies to confirm these advantages.

Keywords: 18F-FDG PET/CT, 18F-PSMA PET/CT, Melanoma.

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EVALUATION OF THE AFFINITY OF RADIOLABELED PEPTIDE [^{131}I]I-DEDEYFELV FOR EGFR-OVEREXPRESSING RECEPTORS IN ADULT-TYPE DIFFUSE GLIOMAS

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