

## 1205Lu Human Metastatic Melanoma Cells, not Human!

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Malignant melanoma is a devastating disease with an increase of incidence year by year despite of the scientific innovations. Understanding the basic biology and signaling pathways that operates in melanoma are inevitable to develop targeted therapeutics and personalized therapies against this disease. Even though emerging preclinical models of melanoma in different organisms has vastly contributed to the recent developments in the melanoma therapy, cell lines and cell culture models presented the initial and valuable insights regarding the basic understanding of the cellular mechanisms that operates in different types of melanomas based on their mutation status. Many human melanoma cell lines has been derived to study the role different gene mutations, 1205Lu cells, is one among them which harbor BRAFV600E and CDK4 mutations [1]. This cell line has been widely used by melanoma researchers around the globe for addressing their research questions [2,3]. In a recent issue of Nature Medicine, Gembarska et al. [2], have demonstrated that MDM4 is a key therapeutic target in cutaneous melanoma including 1205Lu cells. Our laboratory experiments with 1205Lu WC00058 cells (Coriell Institute of Medical Research, Camden, NJ) has confirmed that this is not a human cell line since there is a major contamination (70-80%) of mouse chromosomes in it. It is apparent that metastatic melanomas classically show evidence of complex karyotypes with numerous structural and numerical aberrations and a high degree of aneuploidy [4]. It is crucial to use well characterized cell lines for biomedical research since these discoveries may lead to the development of novel molecular pathways and discovery of inhibitors that can target these signaling pathways in human melanomas [5]. Human cells contaminated with mouse chromosomes may not recapitulate to answer the questions in

translational research or show desired activity in clinical trials. Based on our laboratory investigation, our recommendation to investigators is that to use only cytogenetically analyzed cells from the commercial repositories. Chromosome analysis of 1205Lu cells showed presence of about 80% mouse metaphases and about 20% human metaphases. A representative karyotype from a mouse metaphase has shown in the Figure 1. The chromosome number in the mouse cells ranged from 62-66 with the model chromosome number of 64. Three clonal markers were present in these cells. The tentative identification of the markers are M1=tandem t(4q;11q), M2=tandem t(10q;11q) and M3=tandem t(5q;16q). Although we have demonstrated here only one melanoma cell line 1205Lu, it might be an invaluable resource for the melanoma community since authenticated cell lines are unique tool for melanoma basic research, preclinical testing and translational research.

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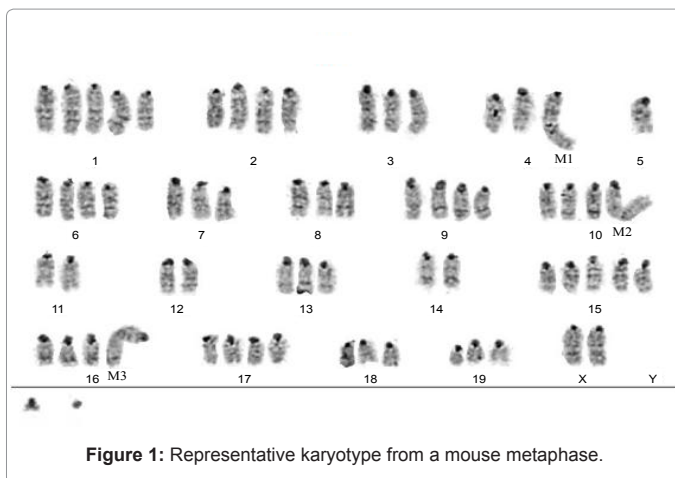


Figure 1: Representative karyotype from a mouse metaphase.

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