MC4R is expressed in brain and regulates appetite and body weight.

All platyfish *mc4r* duplicates display altered coding sequences with in-frame deletions/insertions and/or premature stop codons. While some copies possibly correspond to pseudogenes, others might encode receptors with modified ligand-binding and/or signal transduction properties. Initial biochemical analysis suggested that some of these receptors have a high constitutive ligand-independent activity, while others display a wild-type response to natural ligands. Expression analysis by RT-PCR and Northern blot hybridization indicated that the transcription pattern of some *mc4r* duplicates have been modified after duplication. One particular copy is strongly expressed in melanoma and melanoma cell lines and represents an excellent candidate for *Mdl*. Interestingly, this copy presents a particular in-frame deletion in extracellular domain 2 very similar to mutations in type 1 receptors associated with hypermelanism in animals as different as jaguars and monkeys.

Since MC1R is commonly expressed in mammalian melanoma, *mc1r* was also cloned from the platyfish and from other fish species. This gene is apparently not located in the melanoma region of *Xiphophorus*. In platyfish and medaka, expression of *mc1r* was detected in a broad range of tissues and in embryos. In contrast, expression in zebrafish was restricted to the brain, eye, skin and testis as well as to embryonic stages in which pigmentation starts. A strong expression was detected in platyfish melanoma, suggesting that *mc1r* is a general marker for this type of tumour in vertebrates. In contrast, *mc4r* is overexpressed in melanoma in platyfish, which has not been reported in mammals so far.

ABS-0135

Characterization of nevi in Spanish children: environment and genotype influence on dermoscopic and clinical features.

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Introduction Childhood and adolescence is an important time of life for the formation and evolution of nevi and a higher number of nevi in early life could predict a major risk for developing melanoma. It has been shown that constitutional factors such as hair, eye and skin color, as well as environmental factors such as sun exposure and sun protection, are associated with the number of nevi. Data concerning factors associated with melanocytic nevi have been mostly derived from populations in northern Europe, northern America and Australia, and it is unclear whether these data can be extrapolated to populations in other geographic locations and with different prevalent phenotypes. There are no studies defining the most characteristic dermoscopic patterns in children of our population and relating a pattern predominance with constitutional and environmental factors.

Objective Our aim was to investigate the number and dermoscopic patterns of melanocytic nevi among Spanish children and to assess constitutional and environmental factors associated with the number of nevi and the dermoscopic pattern predominance.

Methods Clinical and dermoscopic examination were performed in 180 children 1–15 years of age. A questionnaire including topics such as past history of sunburns, tanning ability, tendency to sunburn, history of sunlight exposure, use of sunscreens, tendency to freckle and family history of cancer was completed in a face-to-face interview with the parents. On clinical examination, we evaluated hair color, eye color, number of nevi and the presence of nevi in specific locations. All melanocytic lesions were examined dermoscopically and all patterns were registered as present or absent. We also registered the predominant dermoscopic pattern of the child, defined as being present in more than 40% of all of the individual's nevi.

Results The mean number of moles was 17.5. Male gender, past history of sunburns, facial freckling and family history of breast cancer were independent risk factors for having a higher number of nevi. The most frequent dominant pattern found in our population was the globular type.

ABS-0136

Pseudomelanoma after Solcoderm treatment

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Background The term of pseudomelanoma was coined by Kornberg and Ackerman and represents a recurrence of a partially excised melanocytic nevus. This lesion has atypical histological features that make it difficult to differentiate from malignant melanoma. Solcoderm is an aqueous solution containing organic and inorganic acids in the presence of copper ions. The solution destroys a lesion by tissue mummification. It has been used for the treatment of a variety of benign skin lesions.

Case Report We describe a 20-year-old healthy white patient presented a pigmentary lesion on the upper back;

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the lesion was previously treated by Solcoderm. On examination, irregular pigmented plaque of 2 cm in diameter was present in the upper back.

The lesion was excised and showed histological picture of congenital nevus with scar formation. The histological findings, together with the clinical information about previous treatment with Solcoderm, were compatible with the diagnosis of pseudomelanoma.

Conclusion Appearance of pseudomelanoma stressed the controversy of the use of Solcoderm in pigmentary lesions.

ABS-0137

Photoreceptor proteins as cancer-retina antigens in melanoma

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Purpose of the Study Melanocytes, melanoma, and photoreceptor cells are of neuroectodermal origin and have a certain sensitivity to light. In this study, we present evidence that photoreceptor proteins are responsible for visual transduction and its regulation function as a new class of cancer antigens in melanoma.

Results Visual rhodopsin, transducin, cGMP-phosphodiesterase 6, cGMP-dependent channels, guanylyl cyclase, rhodopsin kinase, recoverin, and arrestin are expressed in melanoma and can induce antibody responses in patients. Melanocytes also express mRNA of all photoreceptor genes besides transducin, but were devoid of the corresponding protein, which was tested for rhodopsin, cGMP-phosphodiesterase, guanylyl cyclase, and recoverin. Furthermore, we show for the first time that some healthy tissues express mRNA of these genes, but never protein. Expression profiles and autoantibody responses were confirmed in the MT/*ret* and the HGF^{tg}/$Ink4a^{-/-}$ transgenic mouse melanoma models.

Conclusions On the basis of the results presented in this study, we postulate that photoreceptor proteins investigated in this work can be classified as members of a new group called cancer-retina antigens, since (a) normal expression of these proteins is restricted to the immunoprivileged zone, retina, (b) the proteins are aberrantly expressed in tumor cells, and (c) antigenicity is shown due to the detection of autoantibodies for several proteins of this class. We propose a molecular transition of cancer-retina antigens from mRNA expression in melanocytes to protein expression in melanoma. Our work provides the basis for analyzing regulation of photoreceptor gene expression in normal and malignant cells as well as possible therapeutic tumor targeting using the newly defined class of cancer-retina antigens.

ABS-0138

UVB-induced effects on irradiated nevi and protective role of sunscreens

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Background Sunscreens have shown a positive impact in the prevention of UVR damage in keratinocytes. However, their role in protecting melanocytes against UVR has not been well established. We have previously developed a human in-vivo model to demonstrate the UVB-induced changes in nevi; on the basis of this model, we investigated different molecular markers in irradiated nevi and the impact of sunscreens.

Methods Twenty paraffined samples of two MED-UVB irradiated nevi were included. Seven days before excision, 11 of these nevi were irradiated only on a half (physical protection on the other half), while a physical and chemical sunscreen (octocrylene, Parsol 1789, titanium dioxide, Mexoryl SX, Mexoryl XL) was applied on a half of the other nine nevi, before irradiation of the whole lesion. Immunohistochemical stains were performed with HMB45, MART-1, Ki67, survivin and p53.

Results Histopathological UVB-induced features on irradiated areas (including nevi and adjacent skin) were parakeratotic scale, mild lymphocytic perivascular inflammation, notable increase in number and size of junctional melanocytes, with more prominent dendrites. Suprabasal melanocytes were demonstrated in irradiated nevi, not in adjacent skin. Molecular changes were (i) notable activation of melanocytes, both in the lesions and in adjacent skin (HMB45/MelanA); (ii) increased number of proliferating cells, mostly lesional keratinocytes (Ki67); (iii) increased expression of nuclear survivin, mostly in melanocytes; and (iv) mild increase expression of p53 in apoptotic irradiated keratinocytes, but not in nevocytes. The only difference observed between physically protected areas vs. sunscreen protected areas was the Melan A intensity, being stronger in irradiated plus sunscreen than in physically photoprotected areas. Concerning the remain parameters, no differences were observed between no irradiated halves and irradiated with sunscreen.

Conclusion In addition to clinical and dermoscopical UVB-induced changes, pathological and molecular effects

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