Consiglio Nazionale delle Ricerche

PUBBLICAZIONE, AI SENSI DELL'ART. 19 DEL D.LGS N. 33 DEL 14 MARZO 2013, MODIFICATA DAL D.LGS 25 MAGGIO 2016 N. 97/2016, E INTEGRATA DALL'ART. 1 C. 145 DELLA LEGGE 27 DICEMBRE 2019 N. 160, DELLE TRACCE D'ESAME STABILITE DALLA COMMISSIONE ESAMINATRICE DEL CONCORSO DI SEGUITO INDICATO, NELLA RIUNIONE DEL 19/04/2023.

TRACCE DELLA PROVA ORALE D'ESAME

BANDO N. 367.344 TEC IN

CONCORSO PUBBLICO, PER TITOLI ED ESAMI, PER L'ASSUNZIONE CON CONTRATTO DI LAVORO A TEMPO PIENO E INDETERMINATO DI UNA UNITÀ DI PERSONALE PROFILO TECNOLOGO - III LIVELLO PROFESSIONALE - PRESSO L'ISTITUTO DI NEUROSCIENZE DEL CONSIGLIO NAZIONALE DELLE RICERCHE - VEDANO AL LAMBRO (MB)
SETTORE TECNOLOGICO: SUPPORTO ALLA RICERCA

A)

1. Valutazione comportamentale di un modello murino di autismo

2. La candidata racconti le esperienze più significative del proprio curriculum facendo riferimento alle proprie pubblicazioni scientifiche

3. Illustrare come preparare una presentazione in Power Point

4. La candidata legga e traduca il seguente testo:

Alzheimer's disease (AD) is a neurodegenerative disorder that leads to functional impairments of memory loss and cognitive decline. Central to the disease is the progressive accumulation of amyloid-beta "plaques", which are cleaved protein fragments from amyloid precursor proteins (APP), and neurofibrillary tangles composed of microtubule associated hyperphosphorylated tau proteins. In the earliest stages of the disease, robust expression of plaques and tangles are observed throughout cortical-limbic circuitry, with some theories suggesting that plaque deposition triggers the later expression of tangle pathology (i.e., the amyloid cascade hypothesis). The behavioral manifestations of AD pathogenesis are severe deficits in cognitive function and emotional regulation, which are likely a consequence of pathology induced damage to the hippocampus, surrounding parahippocampal cortices, prefrontal cortex and limbic subcortical regions.

B)

1. Valutazione comportamentale di un modello murino di schizofrenia

2. La candidata racconti le esperienze più significative del proprio curriculum facendo riferimento alle proprie pubblicazioni scientifiche

3. Illustrare come utilizzare Excel per analisi dati

4. La candidata legga e traduca il seguente testo:

Preclinical research examining the neuropsychology of Alzheimer's Disease has primarily focused on memory impairments such as declines in spatial learning and memory. However, in addition to cognitive decline, a number of reports indicate that the earliest stages of the disease are marked by neuropsychiatric symptoms such as psychological distress and alterations in mood. As demonstrated in Dr. Alois Alzheimer's first case, Auguste Deter displayed a striking cluster of symptoms that included memory impairments, emotional disturbances and paranoia. Consistent with this early description, a number of studies indicate that Alzheimer's patients exhibit neuropsychiatric symptoms including anxiety and depression that precede or present along with complaints of memory loss during the mild cognitive impairment stage of the disease.

C)

1. Valutazione comportamentale di un modello murino di depressione

2. La candidata racconti le esperienze più significative del proprio curriculum facendo riferimento alle proprie pubblicazioni scientifiche

3. Illustrare utilizzo software per analisi statistiche

4. La candidata legga e traduca il seguente testo:

The high prevalence of neuropsychiatric symptoms in AD has resulted in several reports directed toward the development of assessment protocols and programs of treatment. Nevertheless, preclinical research aimed at evaluating emotional behavioral phenotypes in transgenic rodent models of AD-related pathology, which typically carry mutations to the APP and/or tau in mice, has received limited attention. A general aim of this review is to summarize findings from studies investigating emotional behavior in rodent transgenic models of AD, with a specific emphasis on anxiety-like behavior. We consider several variables including the specific behavioral test, rodent model used and the impact of AD related pathology on neural circuitry involved in anxiety-like behavior.

D)

1. Valutazione comportamentale di un modello murino di ansia

2. La candidata racconti le esperienze più significative del proprio curriculum facendo riferimento alle proprie pubblicazioni scientifiche

3. Illustrare utilizzo di software per preparazione di una figura per pubblicazione scientifica

4. La candidata legga e traduca il seguente testo:

In humans, anxiety has been defined as a negative emotional state characterized by feelings of tension, worried thoughts, hypervigilance and physiological changes (e.g., activation of the stress response, rapid heart rate, increased blood pressure, etc.) in anticipation of a forthcoming threat. Importantly, if the neural systems underlying the manifestation of anxiety become dysregulated, the biobehavioral response to perceived threats can become excessive or inappropriate, potentially leading to the manifestation of several psychopathologies including anxiety/stress disorders. In rodents, anxiety-like behavior has been defined as a motivated behavior (i.e., defensive behavior) that is elicited by exposure to potential and/or ambiguous threats).

E)

1. Valutazione comportamentale di un modello murino di Alzheimer

2. La candidata racconti le esperienze più significative del proprio curriculum facendo riferimento alle proprie pubblicazioni scientifiche

3. Illustrare le principali caratteristiche di Word

4. La candidata legga e traduca il seguente testo:

The elevated plus-maze is by far the most widely used task to examine anxiety-like behavior in general, as well as to probe anxiety-like behavior in transgenic models of AD specifically. The test apparatus consists of four arms arranged as a "+" that are elevated above the floor. Each arm is joined at the center by a square platform, with two opposite "open" arms containing no walls and two opposite "closed" arms containing walls; the closed arms are often opaque to allow for detailed behavioral analysis. Test sessions are typically five – ten minutes in duration and are typically conducted under red or dim white light.

F)

1. Valutazione comportamentale di un modello murino di Parkinson

2. La candidata racconti le esperienze più significative del proprio curriculum facendo riferimento alle proprie pubblicazioni scientifiche

3. Illustrare l'utilizzo di un programma di scrittura per una pubblicazione scientifica

4. La candidata legga e traduca il seguente testo:

The open field test is another popular task for evaluating anxiety-like behavior and has been utilized to probe anxiety in transgenic rodent models of Alzheimer's Disease. The test apparatus consists of a circular or square arena with the floor marked into sectors by concentric circles or squares, respectively; tall surrounding walls prevent escape. Test sessions are typically five – ten minutes in duration and are conducted under bright white light. Rodents naturally prefer the periphery of the open field and display risk assessment behaviors toward the center zone of the apparatus due to an innate fear of potential predation. Thus, during testing, rodents exhibit high levels of peripheral activity and typically show thigmotaxis (wall-hugging), a behavior where the animal remains close to the vertical walls.

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