

BIOFIREX- UM PAINEL DE (BIO)MARCADORES PARA A VIGILÂNCIA DA SAÚDE E DA SEGURANÇA DO BOMBEIRO (PCIF/SSO/0017/2018)

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Objetivos gerais:

- i) usar uma abordagem multidisciplinar para realizar uma avaliação abrangente da exposição ocupacional (via monitorização e biomonitorização) dos bombeiros a poluentes gerados durante incêndios florestais
- ii) avaliar os impactos na saúde e na segurança (questionários, avaliação física e psicológica, e testes clínicos)
- iii) identificar um conjunto de (bio)marcadores apropriados para a vigilância da exposição ocupacional, da saúde e da segurança dos bombeiros, assim como estabelecer uma lista de recomendações e de boas práticas

Task 1 (24 months)

Characterization of the study population

(REQUIMTE, FEUP, IPB, ULSNE, ANPC)

Phase I: pre-fire season (January–March) (background); Phase II: fires season (April–October); Phase III: after fires season (November-December)

Task 1 (24 months)

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Task 2 (30 months)

Monitoring: personal air

PM_{2.5}, 18 PAHs, As, Cd, Pb,
VOCs, CO, NO₂

(REQUIMTE, FEUP, IPB, ANPC)

Task 3 (30 months)

**Monitoring: dermal
exposure**

18 PAHs

(REQUIMTE, FEUP, IPB, ANPC)

Task 4 (24 months)

Clinical Tests

(ULSNE, IPB)

4.1 Biological samples
collection

4.2 Psychological and
cardio-respiratory health

Task 1 (24 months)

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Task 5 (30 months)
Biological monitoring: biomarkers of exposure
(REQUIMTE, ISPUP, IPB)

5.1 Biomarkers of exposure-metabolites in exhaled air (VOCs)

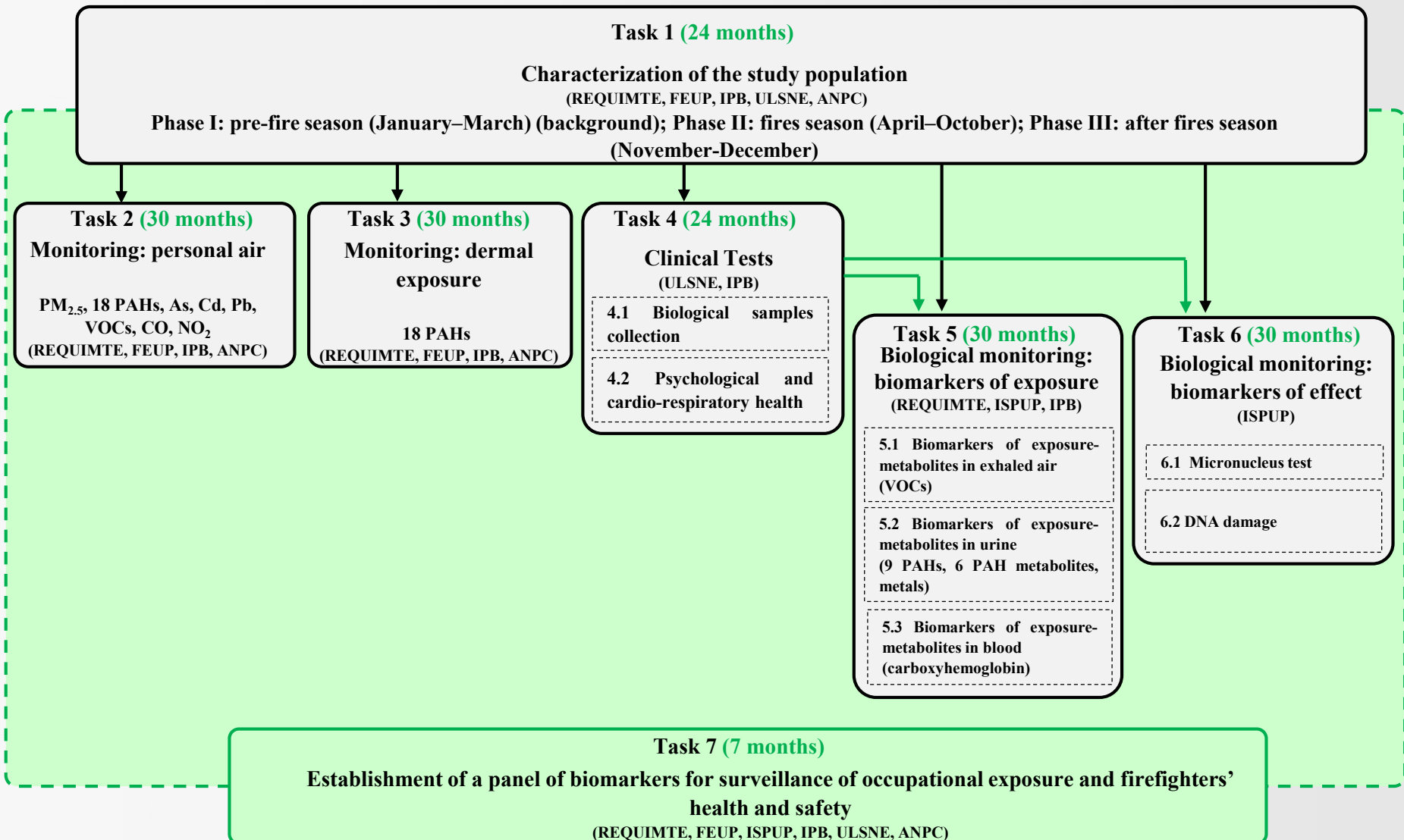
5.2 Biomarkers of exposure-metabolites in urine (9 PAHs, 6 PAH metabolites, metals)

5.3 Biomarkers of exposure-metabolites in blood (carboxyhemoglobin)

Task 6 (30 months)
Biological monitoring: biomarkers of effect
(ISPUP)

6.1 Micronucleus test

6.2 DNA damage



Task 1 (24 months)

Characterization of the study population

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Phase I: pre-fire season (January–March) (background); Phase II: fires season (April–October); Phase III: after fires season (November–December)

Task 2 (30 months)

Monitoring: personal air

PM_{2.5}, 18 PAHs, As, Cd, Pb,
VOCs, CO, NO₂
(REQUIMTE, FEUP, IPB, ANPC)

Task 3 (30 months)

Monitoring: dermal exposure

18 PAHs
(REQUIMTE, FEUP, IPB, ANPC)

Task 4 (24 months)

Clinical Tests

(ULSNE, IPB)

- 4.1 Biological samples collection
- 4.2 Psychological and cardio-respiratory health

Task 5 (30 months)
Biological monitoring: biomarkers of exposure
(REQUIMTE, ISPUP, IPB)

- 5.1 Biomarkers of exposure-metabolites in exhaled air (VOCs)
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Task 6 (30 months)
Biological monitoring: biomarkers of effect
(ISPUP)

- 6.1 Micronucleus test
- 6.2 DNA damage

Task 7 (7 months)

Establishment of a panel of biomarkers for surveillance of occupational exposure and firefighters' health and safety

(REQUIMTE, FEUP, ISPUP, IPB, ULSNE, ANPC)

Task 8 (36 months)

Project coordination and dissemination

(REQUIMTE, FEUP, ISPUP, IPB, ULSNE, ANPC)

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FCT Fundação para a Ciência e a Tecnologia

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