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THE IMPACT OF CELL CULTURE PROCESS ON THE QUALITY OF TISSUE ENGINEERED ARTIFICIAL CONDUIT FOR URINARY DIVERSION

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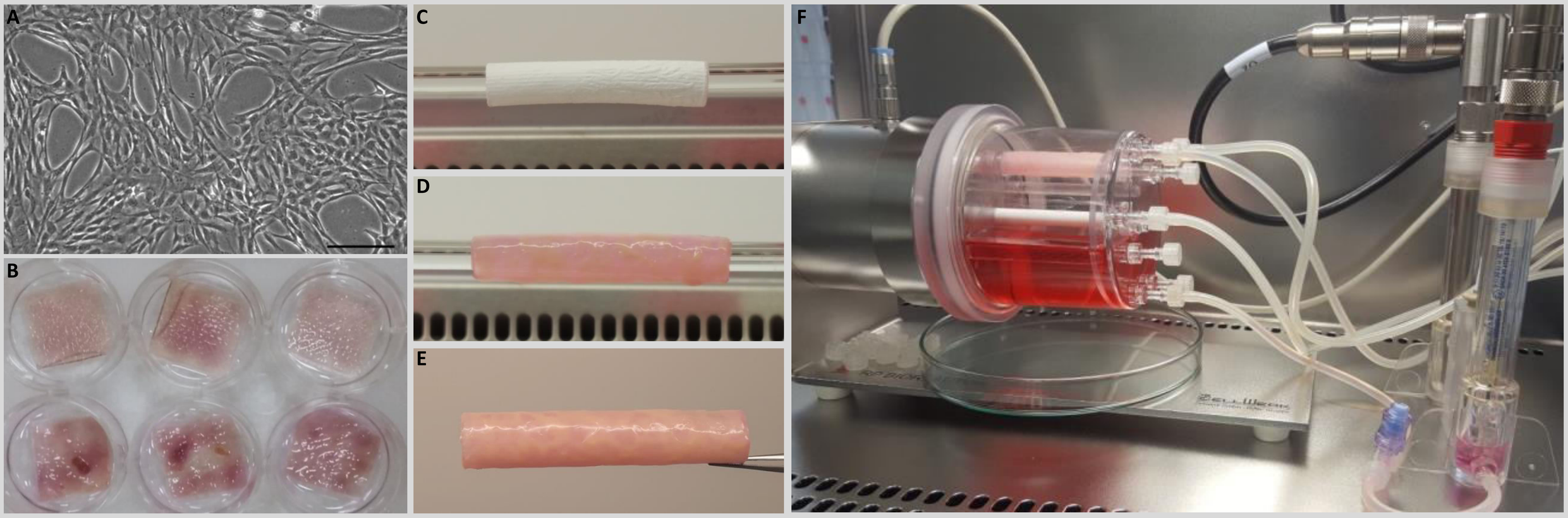
INTRODUCTION: Bladder cancer is the most common cancer of the urinary tract. About 20% of bladder cancer are tumours that require complete bladder removal. Commonly used methods of urinary diversion following radical cystectomy are ileal conduit or neobladder. The use of the intestinal wall in reconstruction of the urinary tract is associated with numerous serious short and long term complications. Tissue engineering techniques make it possible to construct an artificial neo-conduit *de novo*. The clinical outcome will be strictly depended on the quality of tissue engineered product.

AIM: Evaluation of cell culture conditions on the growth of Adipose Derived Stem Cells (ADSCs) seeded on artificial conduit.

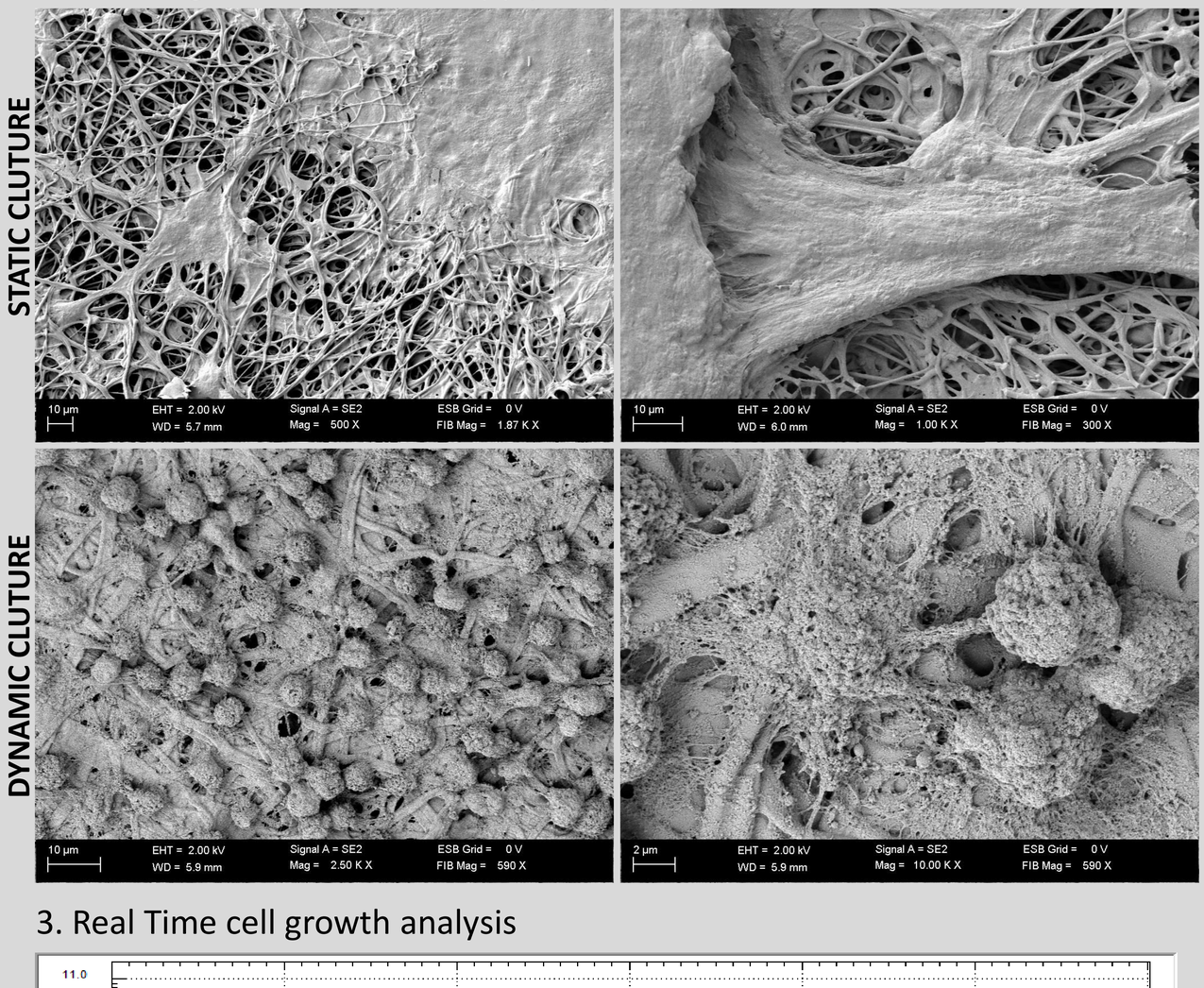
MATERIALS AND METHODS:

1. Static (B) and dynamic (C, D, E, F) culture of ADSCs (A) on artificial conduit

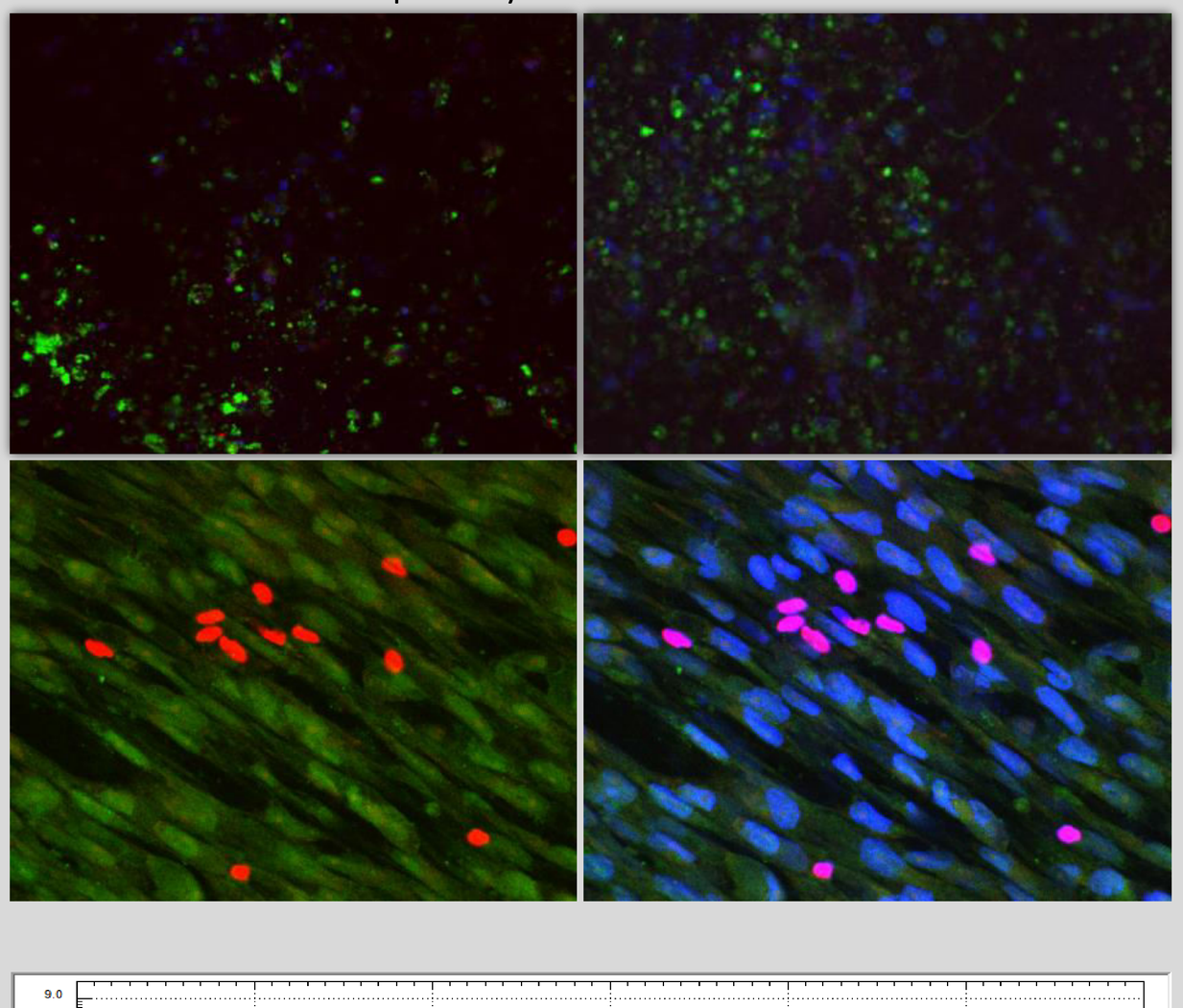


RESULTS:

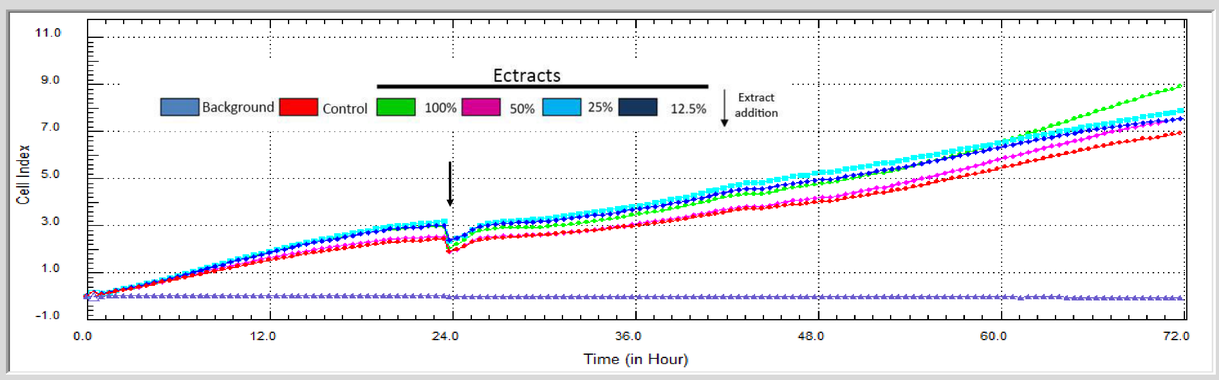
1. Scanning Electron Microscopy (SEM) analysis

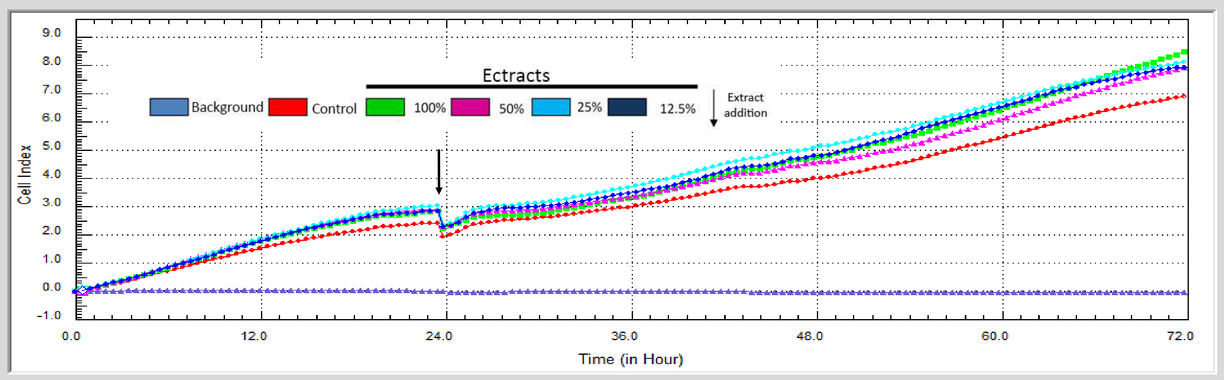


2. Fluorescence microscope analysis



3. Real Time cell growth analysis





CONCLUSIONS:

Constructed *de novo* artificial conduit creates optimal conditions for the growth of ADSCs and requires dynamic culture with the use of bioreactor in order to ensure optimal conditions for stem cell growth.

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